



ACE & STEM CURRICULUM

"Connecting Education to Tennis"

Grades 3-8

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ACE

ACADEMIC CREATIVE ENGAGEMENT

"Connecting Education to Tennis"

Grades 3-5

ACE PHILOSOPHY

Academic Creative Engagement (ACE) is an out-of-school academic curriculum connected to 21st Century Skills, Common Core State and National Standards and the sport of tennis. The curriculum was created by NJTL of Trenton, and is designed to support academic achievement, health/wellness and social/emotional skills by guiding children through educational processes that include decision-making, problem solving and working together toward common goals. When combined with a tennis program, it provides important youth development outcomes and reflects the ideals and principles of Arthur Ashe by giving children access to a safe, healthy and educational opportunity. It can operate in partnership with schools, youth centers, government programs, universities and after-school providers. The lessons are engaging, support classroom instruction, and encourage students to communicate and participate in each activity.

Schools are mandated to prepare children for specific state assessments; whereas an out-of-school program provides the chance to talk about learning—the importance of thinking, discussing math concepts, writing clearly and speaking well. The activities contained in ACE provide a platform from which this goal can be reached.

SAMPLE PROGRAM FORMATS

AFTER-SCHOOL:

Each session should allow approximately 25 students to participate two to three days per week. We do not recommend participation numbers to exceed 25 students per session so that every child's voice can be heard. We encourage parents to participate and recommend recruiting children from different schools to help build positive community relationships. On each program day, the 25 students are divided into groups of 14 and 15. For the first 45 minutes, Group A students learn tennis and exercise with a tennis professional, while Group B students are enriched in math, literacy and nutrition in a classroom setting. After 45 minutes, the groups rotate to the final session.

SUMMER CAMPS:

The ACE curriculum can be incorporated into a summer camp model to provide an educational component. Activities can be used as a station for children to rotate through during the day.

TENNIS PRACTICES:

Encourage teamwork and strategic thinking with your tennis practice. Children may play critical thinking games or complete math and literacy activities at the beginning or end of a practice.

PROGRAM EVALUATION

Online performance surveys, attendance records and report card grades can be used to measure specific program goals and objectives. ACE instructors, classroom teachers and students are encouraged to complete performance rubrics before and after each session. Student reflections are an important part of this process. The data collected from the assessment tools can be interpreted in a quantitative or qualitative manner.



ACTIVITY DESCRIPTION

Each ACTIVITY represents a specific lesson and includes an informational table at the top of the page that depicts the outcomes of the lesson, the educational standards associated with the lesson, student reflection questions, how the lesson connects to the sport of tennis and the materials and time it will take to complete the lesson.

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
1.	1.	1.	1.
2.	2.	2.	2.
3.	3.	3.	3.
MATERIALS/TIME markers, chart paper, ten-yard lengths of ribbon 45-60 MINUTES			

Each activity has three main sections: SERVE, RALLY and POINT. This format remains consistent throughout the curriculum, and has been created to keep the lessons simple and easy to follow. The following are brief descriptions of each section you will find in an activity:

SERVE – “The introductory part of the lesson.”

This section is intended to create dialogue with the students. It gets them thinking and sharing their ideas with their peers and the instructor.

RALLY – “The main idea of the lesson.”

This section is the main instructional part of the lesson. Step-by-step explanations, discussions and directions are provided so that the students are prepared for the “POINT.”

POINT – “The product or goal the children will accomplish.”

This section describes what the students will do or create with the information that has been presented in the Rally. The product should be something that demonstrates understanding of the concepts presented. When appropriate, student work should be shared with specific audiences (e.g., other students, parents, teachers, etc.) or put on display for others to appreciate.

PROBLEM SOLVING INFORMATION

ACE Book Grades 3-5 engages students with problem solving, games and puzzles. Various problem-solving strategies will be introduced and discussed. Please remember that problem solving is meant to be challenging. Students need to share their strategies. Explaining strategies and processes helps learners reinforce their thinking and allows others to reflect and provide feedback. Students must understand that answers do you no good after the fact. However, how you solved that problem will serve you well the next time you see a similar type of problem.

FOUR STEPS TO SOLVING A PROBLEM

1. Make sure you understand the problem as presented.
2. Develop a plan (strategy) to solve that problem.
3. Follow your plan.
4. Check back – did you answer the question as presented?

STRATEGIES FOUND IN BOOK ONE

- Draw-A-Picture or Diagram
- Guess-Check-Rethink
- Acting Out the Problem
- Making an Organized List
- Making a Table
- Seeing a Pattern

TENNIS PLAYER'S APPROACH TO SOLVING MATH PROBLEMS

The problems that can be found in this book should generate wonderful dialogue between students. That dialogue is critical if students are to improve their problem-solving skills. This is no different than tennis players practicing for an upcoming match. Players and coaches do not prepare for their next tournament in absolute silence. What are they discussing—strategies! They are trying different shots that they hope will lead to victory.

One way to approach the problems in this book is with tennis in mind. Problems can be tackled as “Singles” (solved alone), as “Doubles” (with a partner) and as a “Team” (with small groups). While students are developing their skills as problem solvers, problems should be solved with a partner or with the team. As they become more confident and feel like they can go it alone, they can move into ‘singles matches.’

As you look through the problems in this book, you may see an (S) as a suggested single’s problem, a (P) for a partner’s problem, or a (T) for a team problem. Please note that these are only suggestions. You know your students best and their comfort in the area of problem solving. Your children will also let you know how they feel about a particular problem. A problem that starts out as a “singles” may end up as a “team” or a “partner.” Please understand that problem solving should be fun and challenging. Answers to problems can be found at the end of the problem in parenthesis (X). Solution examples to some of the problems can be found at the end each activity.

Try to discourage your children from proclaiming that a problem is hard. Suggest they use the term “challenging” instead. This can also carry over to the tennis court. Stating that an opponent will be hard to beat makes it sound like you’ve already given up. Stating that an opponent will be a challenge sounds more like you are looking forward to going out there and trying your best.

CHAPTER 1: ACE CORE ACTIVITIES

ACTIVITY 1: Team Meeting

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To build a positive, respectful climate using spoken, written and visual language To create a poster listing agreed upon respectful behaviors in the classroom; write up name tag option To foster positive peer relationships	Students use spoken, written and visual language to accomplish their own purposes.	How did you demonstrate respect today? How did others respect you today?	Code of Conduct Demonstrating respect Explore the importance of sportsmanship
MATERIALS/TIME chart paper, "What We Need to Know" handout, markers, notebooks, pencils 45-60 MINUTES			

SERVE

1. On our first team meeting it is important that we agree about how we would like to learn together. In tennis, we have a Code of Conduct that goes beyond the rules to help us play respectfully, with courtesy and good sportsmanship.

RALLY

1. Explain that Arthur Ashe was respectful both on and off the court. Tennis has rules we must follow and we are also expected to show good sportsmanship. The rules and Code of Conduct help us become stronger athletes and enjoy the game. Win or lose, we go to the net and shake hands with our opponent. That is one way we are respectful on the court. Ask: How else are we respectful on the court?
2. Ask the students questions, in order to gather ideas about what a safe class they are proud to belong to would look like:
How can we show respect during this learning time?
How would you like to be treated?
What rules do we need?
3. Distribute the "What We Need to Know" handout. Read over the instructions with your group. It is helpful to tell one or two of your stories related to one of the statements on the handout. Ask if there are any questions.

4. Once most have finished discuss and share responses. Do we all have same/different rules?
5. Brainstorm ideas, which rules will build a positive and respectful climate. Ask:
 What would it look like?
 What would it sound like?
 Can you give an example?
 How would you feel in a respectful classroom?
6. Write all reasonable ideas on a chart: For example:

HOW TO SHOW RESPECT

- Take turns
- Share materials with everyone
- Listen to the speaker
- Don't make fun of others' ideas

POINT

1. After collecting ideas, ask the students to work together to design a poster to hang in your area. Ask the students to write agreed upon ideas on the poster, illustrate, and ask everyone to sign it....Or partners can work on writing and illustrating each idea on a clean sheet of paper.
2. Share it/Post it where everyone can see it.
3. Reinforce the importance of participation in activities as being a shared responsibility with members of the group.
4. Ask the students for more ideas for discussion in future team meetings. Let them know that team meetings will be held periodically or when something arises that needs the attention of the whole group.



EXTENSION ACTIVITY—Name Tags for a Positive Climate

1. Have students take a piece of paper and fold it lengthwise.
2. Students put their name, in large, clear letters, on one half of the folded paper.
3. Students place 'Code of Conduct' words on the other half of the paper.

This activity allows the instructor to have name tags for taking attendance and Code of Conduct words facing the students as a gentle reminder of what makes a good learning environment.

ACTIVITY 1 HANDOUT: "WHAT WE NEED TO KNOW"

All of us have certain rules which guide the ways we interact with others. Generally, we follow these rules although we rarely think about them. In some cases, rules are general, like never scream. Usually, they apply to certain people (e.g., Never scream at your grandmother), or in special places (e.g., Don't scream at your grandmother in church) or under certain conditions (e.g., Never scream at your grandmother if she is sleeping in church).

For each item below, write down the rule you were taught and if you can, write how you learned it.

I was taught that...

1. If you know someone is doing something wrong you should...

2. In a group, if you have something important to say, you should...

3. If you are talking to someone and they are not looking at you it means...

ACTIVITY 2: TEAM BUILDING — INTERVIEWS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Students will interview each other to discover likenesses and differences. Learn each other's names	To develop an understanding of and respect for diversity in language use, patterns and dialects across cultures, ethnic groups, geographic regions and social roles.	What did you learn about someone else today? What did someone learn about you? What is important to do when you work with a partner?	Learning to work with partners Respecting ourselves and others Contributing to our community
MATERIALS/TIME notebooks, pencils, tennis ball 45 MINUTES			

SERVE

1. Gather the students in a circle. Tell them it is important that we learn about every member of our team starting with our names.

RALLY

1. Ask the students to introduce themselves and pass a tennis ball to any child who volunteers to go first. Ask them to say their name and tell one thing about themselves. For example, Hi, I am ____ and I like to _____. Then have that child pass or roll the ball to the next speaker.
2. Go around the circle a second time and ask each student to say hello and shake hands with the people on either side of them. Ask them to try and use the other person's name.

POINT (Interviews - partner activity)

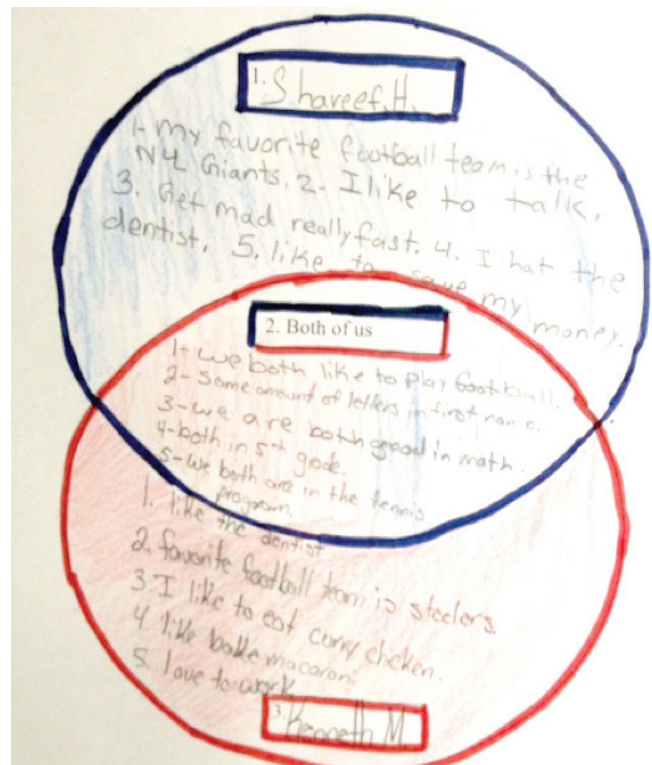
1. Have the students get their notebooks and sit with a partner. What is important to do when you work with a partner?
2. Explain that they have 5 minutes (or so) to interview their partner to discover three or more ways they are alike and three or more ways they are different.
3. They can set up their papers to look like this and jot down ideas.

WAYS WE ARE ALIKE...	WAYS WE ARE DIFFERENT

4. Both partners will make a chart in their notebooks. Ask them for some questions they could ask their partners.
5. Some questions they could ask their partners are:
 Favorites – What is your favorite food? Team? Game? Music?
 Do you have a pet?
 What do you like to do after school?
 What are some things you really like to do?
 What games do you like to play?
6. Ask the students to come back to the group and tell about their partner. Give each pair 10 strips of colored paper for a paper chain, 1 1/2 inches wide by 4 inches long, and access to tape and a stapler.
7. Students will write one fact about themselves on a paper strip until they have created 5 strips about themselves.
8. Their partners will do the same. They can add sketches to the facts, decorating the strips.
9. One at a time, they will turn one paper strip into a circle creating a loop and staple. Place another strip, about their partner through the first and staple, creating the beginning of a chain. They can alternate, one fact about you, one fact about your partner. Each person can choose his or her own color to form a pattern, or not!
10. After each pair has created a chain of 10, connect them together and display in your space.

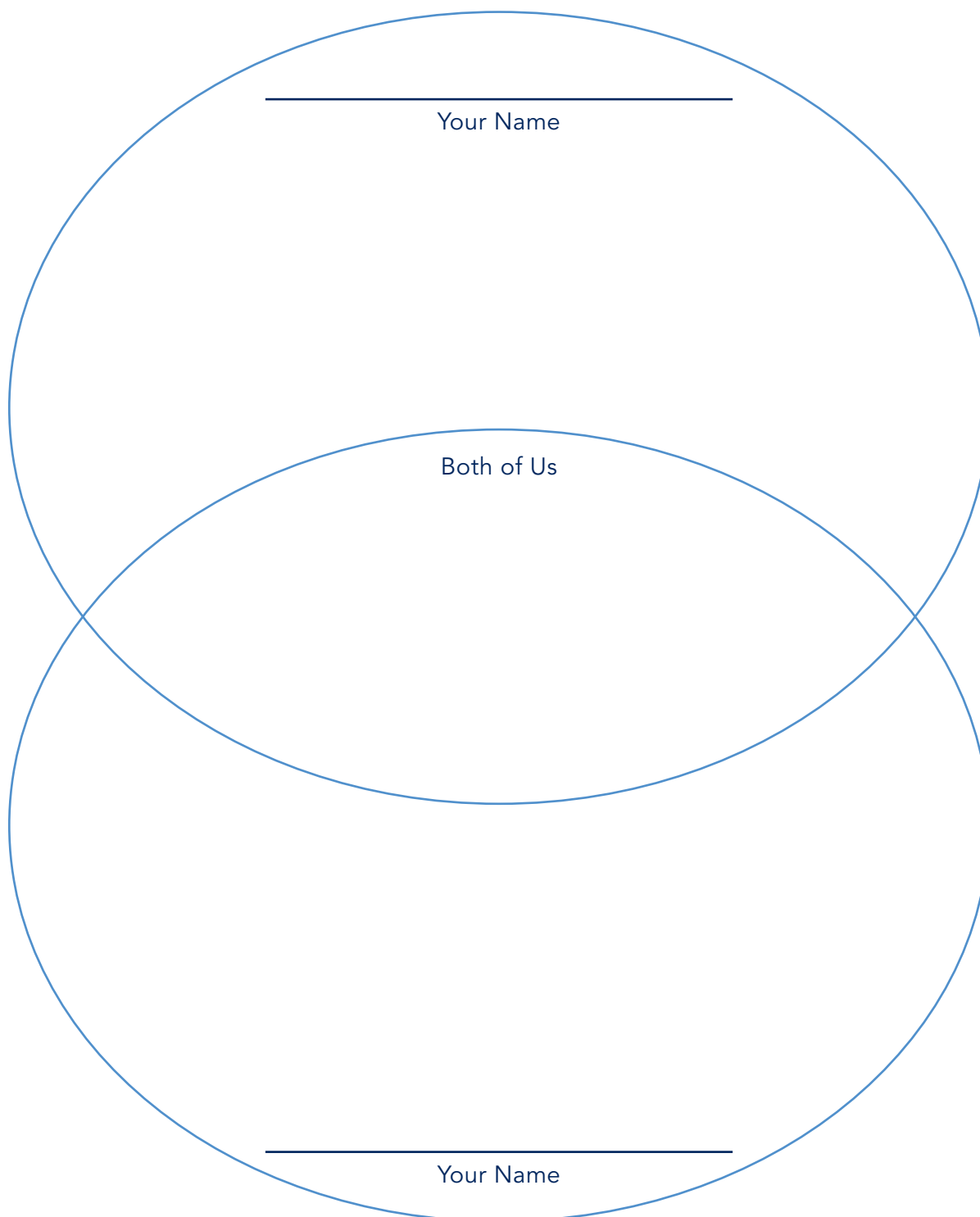
More Fun

If time and enthusiasm allow, get into groups of 4, and try it again. This is a little more challenging!



VENN DIAGRAM

Create a Venn diagram showing ways you are alike/different. Write your name in Box 1. Write about yourself in the first circle. Write your partner's name in Box 3. Write just about him/her in the lower circle. Work together to write things that are TRUE for both of you in the middle section.



ACTIVITY 3: "HELLO BINGO"

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To meet and learn about others</p> <p>To develop a sense of belonging and connectedness</p>	<p>Students participate as members of a literacy community.</p> <p>Ask and answer questions about what a speaker says in order to gather information additional information or clarify something that is not understood. Follow agreed-upon rules for discussions.</p>	<p>What did you learn about a teammate today?</p> <p>Did you find anyone today that shares an interest with you?</p> <p>How are you alike?</p> <p>Did you meet anyone that is different from you?</p>	<p>Learning about teammates</p> <p>Respecting others and ourselves</p>
<p>MATERIALS/TIME</p> <p>Hello Bingo Cards – one per player, pencils</p> <p>20-45 MINUTES</p>			

SERVE (Whole Group Activity)

1. Announce that we will be playing a game of Hello Bingo.
2. Ask the students to distribute bingo cards.

RALLY

1. Ask the students to read the Hello Bingo card to themselves.
2. Tell the students to put their name on the middle square. You will notice there are 3 blank squares. Those are for you to fill in. Ask for suggestions to fill in the blank squares. Make a list of possibilities on the board or chart paper. Provide a few minutes for all students to fill in the three blank squares.
3. Tell the students they will be walking around trying to find someone who fits the words on the square. Give an example.
4. When someone answers yes to the prompt on the square, that person writes his name in the square and you move on trying to find someone else who can sign your card. You cannot have the same person sign two adjoining squares.
5. After you collect 5 signatures vertically, horizontally or diagonally, shout Bingo!

POINT

1. The students walk around the room trying to find someone who fits the descriptors on the bingo squares.
2. After a few Bingos, gather the students together and discuss what they found out about each other. Ask if anyone discovered something surprising. Ask, How where you alike? How where you different?

EXTENSION

Use the blank *Hello Bingo Sheet* to allow the children to create their own bingo card.

HELLO BINGO

Find someone who...

Was born in another state or country	Can say "hello" in more than one language	Can play a musical instrument	Has an interesting hobby	Likes to play tennis
Enjoys reading	Likes to dance	Is a good artist	Has a pet	Likes to do science experiments
Knows a song by heart	Is left-handed	Put your name here		Listens to hip hop
Has 3 or more siblings	Was born in the same month as you	Favorite color is blue	Has a grandparent living with them	Traveled to another country
Likes the same sport as you		Math is their favorite subject		Knows what "Deuce" means in tennis

ACTIVITY 3: EXTENSION

Hello Bingo—Can you find someone who...

(Create your own headings)

ACTIVITY 4: I AM AMERICA

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>Make connections between our lives and others</p> <p>Reflect on our progress and behaviors</p> <p>Generate a list of statements about themselves using the prompt: I Am...</p>	<p>Students use a variety of resources to gather and synthesize information and to create and communicate knowledge</p>	<p>What did you do well today?</p> <p>What did you notice a teammate doing well today?</p>	<p>Identifying areas of strength and reflecting upon performance</p>
<p>MATERIALS/TIME</p> <p>Mentor Text – I Am America, notebooks, and sample of finished I Am...</p> <p>Option – photos of each child and glue stick</p> <p>45 MINUTES</p>			

PREP: Take and print pictures of each child.

SERVE

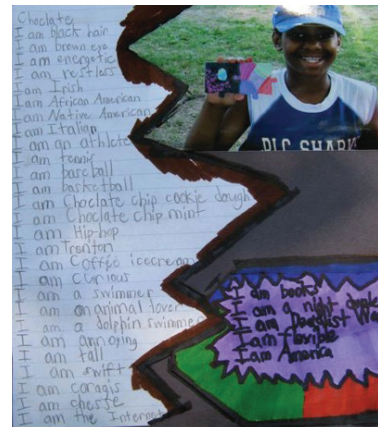
1. Hold up the book and show the cover. Ask the students, "What do you notice about the kids on the cover?"

RALLY

1. Read the book aloud. Explain the unknown words like diverse (Diverse: Made up of many different groups).
2. Stop every few pages and ask, "Are they alike or different from the kids on the pages?"
For example, "Are you hip hop? What are your favorite foods?"

POINT

1. Ask the students to go to their notebooks and write at the top: "I am America" and then generate a list of I am statements.
Encourage sharing of ideas like:
I am Tennis
I am New Jersey
I am pizza
(Give the students enough time to make a list.)
2. When lists are completed, ask students to share their list with a teammate, or the entire group. Praise students for working hard.
3. Now ask the students to take their ideas and put them on construction paper. They can write "I Am America" at the top or "I Am Atlanta," or the name of the city in which they live. If photos are available, each child can place their photo on the paper and glue it down. Encourage the students to sketch and write to fill the paper with words and images. Images may include an ice cream cone, T-shirt, iPod, etc.
4. When pages are finished, they may be displayed or taken home to share.



ACTIVITY 5: RIBBON/VOCABULARY INTRODUCTION

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Students will be introduced to geometry vocabulary in a non-traditional way. Students will be up and moving, communicating, problem solving, and drawing on previous knowledge.	Mathematics as: Problem Solving, Communication, and Reasoning. Mathematical Connections Geometry Measurement Recognize and create shapes having specified attributes such as a given number of angles	How did I demonstrate cooperation today?	Teamwork Cooperation Participates in solving problems as they arise. Acts considerably toward others. Handles materials responsibly
MATERIALS/TIME Mentor Text – I Am America, notebooks, and sample of finished I Am... Option – photos of each child and glue stick 45-90 MINUTES			

SERVE

1. Explain to the students that they will be using a very large ring of ribbon to demonstrate various geometry terms. Groups of five or six students will work together for this activity.
2. For this portion of the lesson, terms sheets will be handed out. The students will discuss among themselves whether they can demonstrate, with their ribbon, a geometric term.
3. Ask the students to write those terms that are unknown on the board.

RALLY

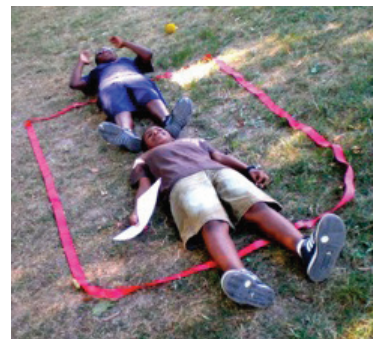
1. Discuss those terms that are listed on the board. Ask the students to select one of the terms and the instructor will draw a representation of that term on the board.
2. Ask the students in each group to create what they now see on the board with their ribbon.
3. Introduce the terms PERIMETER and AREA to the students. Please note:
 - a. Area will change as the shape of the ribbon is modified.
 - b. Perimeter will stay the same as various shapes are created.

POINT

1. Have a game of "Challenge." Ask each group to take turns challenging the other to create a term with their ribbon. One point is awarded for each correct representation. Tennis scoring should/could be used.

VARIATION

Instructor calls out a term to see which group can correctly construct it with their ribbon first.



GEOMETRY VOCABULARY

Point

Line

Line Segment

Congruent

Ray

Perpendicular Line Segment

Parallel Line Segments

Angle

Right Angle

Acute Angle

Obtuse Angle

Straight Angle

Vertex

Scalene Triangle

Isosceles Triangle

Equilateral Triangle

Symmetry Line

Polygon

Quadrilateral

Square

Triangle

Rectangle

Parallelogram

Pentagon

Hexagon

Heptagon

Octagon

GEOMETRY VOCABULARY WITH DEFINITIONS

Point – A location in space - a dot on a piece of paper

Line – Connects two points via the shortest path and continues indefinitely (forever) in both directions

Line Segment – Part of a line between two points

Congruent – Figures that have the same shape and size

Ray – A ray is a “straight” line that begins at a certain point and extends forever in one direction

Perpendicular Line Segment – Line segments that intersect (cross) at an angle of 90°

Parallel Line Segments – Line segments that never intersect (they are always the same distance apart)

Angle – The figure formed by two rays sharing a common endpoint or vertex.

Right Angle – An angle that measures 90°

Acute Angle – An angle that measures less than 90°

Obtuse Angle – An angle that measures more than 90°

Straight Angle – An angle that measures 180°

Vertex – Point at which two line segments intersect (forming an angle)

Scalene Triangle – A triangle with all three sides with different lengths

Isosceles Triangle – A triangle with two equal length sides (and two equal internal angles)

Equilateral Triangle – A triangle with all three sides of equal length (each internal angle = 60°)

Symmetry Line – An imaginary line along which a figure can be folded, so that the two parts match

Polygon – A closed figure made of line segments each of which intersects with exactly two other line segments

Quadrilateral – 4-sided polygon

Square – A quadrilateral having all sides equal in length and forming right angles

Triangle – A 3-sided polygon (sum of internal angles = 180°)

Rectangle – A 4-sided polygon with all right angles

Parallelogram – 4-sided polygon with two pairs of parallel sides

Pentagon – 5-sided polygon (the graphic shows a regular hexagon with “regular” meaning each of the sides are equal in length)

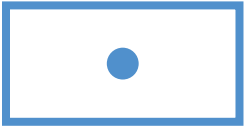
Hexagon – 6-sided polygon

Heptagon – 7-sided polygon

Octagon – 8-sided polygon

GEOMETRY VOCABULARY W/VISUAL REPRESENTATIONS

Point – A location in space - a dot on a piece of paper



Line – Connects two points via the shortest path and continues indefinitely (forever) in both directions



Line Segment – Part of a line between two points



Congruent – Figures that have the same shape and size



Ray – A ray is a “straight” line that begins at a certain point and extends forever in one direction



Perpendicular Line Segment – Line segments that intersect (cross) at an angle of 90°



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Angle – The figure formed by two rays sharing a common endpoint or vertex.



Right Angle – An angle that measures 90°



Acute Angle – An angle that measures less than 90°



Obtuse Angle – An angle that measures more than 90°



Straight Angle – An angle that measures 180°



Vertex – Point at which two line segments intersect (forming an angle)



Scalene Triangle – A triangle with all three sides with different lengths



Isosceles Triangle – A triangle with two equal length sides (and two equal internal angles)



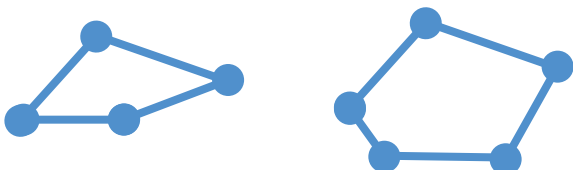
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Polygon – A closed figure made of line segments each of which intersects with exactly two other line segments



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Parallelogram – 4-sided polygon with two pairs of parallel sides



Pentagon – 5-sided polygon (the graphic shows a regular hexagon with “regular” meaning each of the sides are equal in length)



Hexagon – 6-sided polygon



Heptagon – 7-sided polygon



Octagon – 8-sided polygon



ACTIVITY 6: MEASURING THE TENNIS COURT

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>Students will create real world 'images' of geometry found on the tennis court</p> <p>Students will receive hands-on experience in measuring large areas</p> <p>Students will have the opportunity to record data in an organized way</p>	<p>Mathematics as: Problem Solving, Communication, and Reasoning.</p> <p>Computation and Estimation</p> <p>Mathematical Connections</p> <p>Geometry</p> <p>Select tools and apply standard units to measure.</p> <p>Understand the need for measuring with standard units.</p>	<p>Were my estimates reasonable?</p> <p>Did I work well with my peers?</p>	<p>Learning the names for the various parts of the tennis court</p> <p>Learning the sizes of the various parts of the tennis court</p> <p>Teamwork</p> <p>Handles materials responsibly</p>
<p>MATERIALS/TIME</p> <p>measuring devices (rulers, yardsticks, tape measures, rolling measuring wheels), chart paper, markers, pens, pencils, notebooks, a tennis court, court diagrams - with and without measurements</p> <p>45-90 MINUTES</p>			

SERVE

1. Ask the students to estimate the length of various lines on a tennis court. Use tennis terms or mathematical terms on the court diagram.
2. Ask the students to discuss why they think their estimates are accurate. Ask, "What did you use as a point of reference?" (Your height? The length of a football field? What a foot or yard looks like?)

RALLY

1. Working with a partner, ask students to measure the various parts of the tennis court. They may use rulers, yardsticks, tape measures, or rolling measuring wheels.
2. Measurements will be recorded on another blank diagram of the tennis court. If proper terms are known by the students (tennis or mathematical), they should be placed on the diagrams. (i.e. length, width, service line, base line)
3. Ask students to measure diagonals of their choosing on the court.
4. **If a tennis court is not available, you can give the students the measurements for the court and have them draw the 'court' on the playground with sidewalk chalk. String should be used to make sure lines are as straight as possible.**

POINT

1. Come back to the classroom and compare measurements. If more than one court was measured by the students, were the measurements the same? (This can create an excellent discussion on the standard measurements used for tennis courts. Is that important and why?)
2. Have the students discuss their findings. Ask, "Which devices were easier to use when measuring?" "Which seemed to be more accurate?" "Did you measure in inches, feet, or yards?"
3. Actual court measurements should be shared at this time. Allow for students to compare their work with the actual measurements. Ask, "How close were your measurements to the real measurements?"
4. On a "giant court diagram," have students label both the tennis terms and geometric terms for the various parts of the court. (e.g., service line, parallel lines, etc.)
5. Measurements should now be placed on the diagram by the students.

EXTENSION

At this point, discussions could take place as to the different types of courts: hard, grass, and clay.

Ask the students:

"Are they all the same size?"

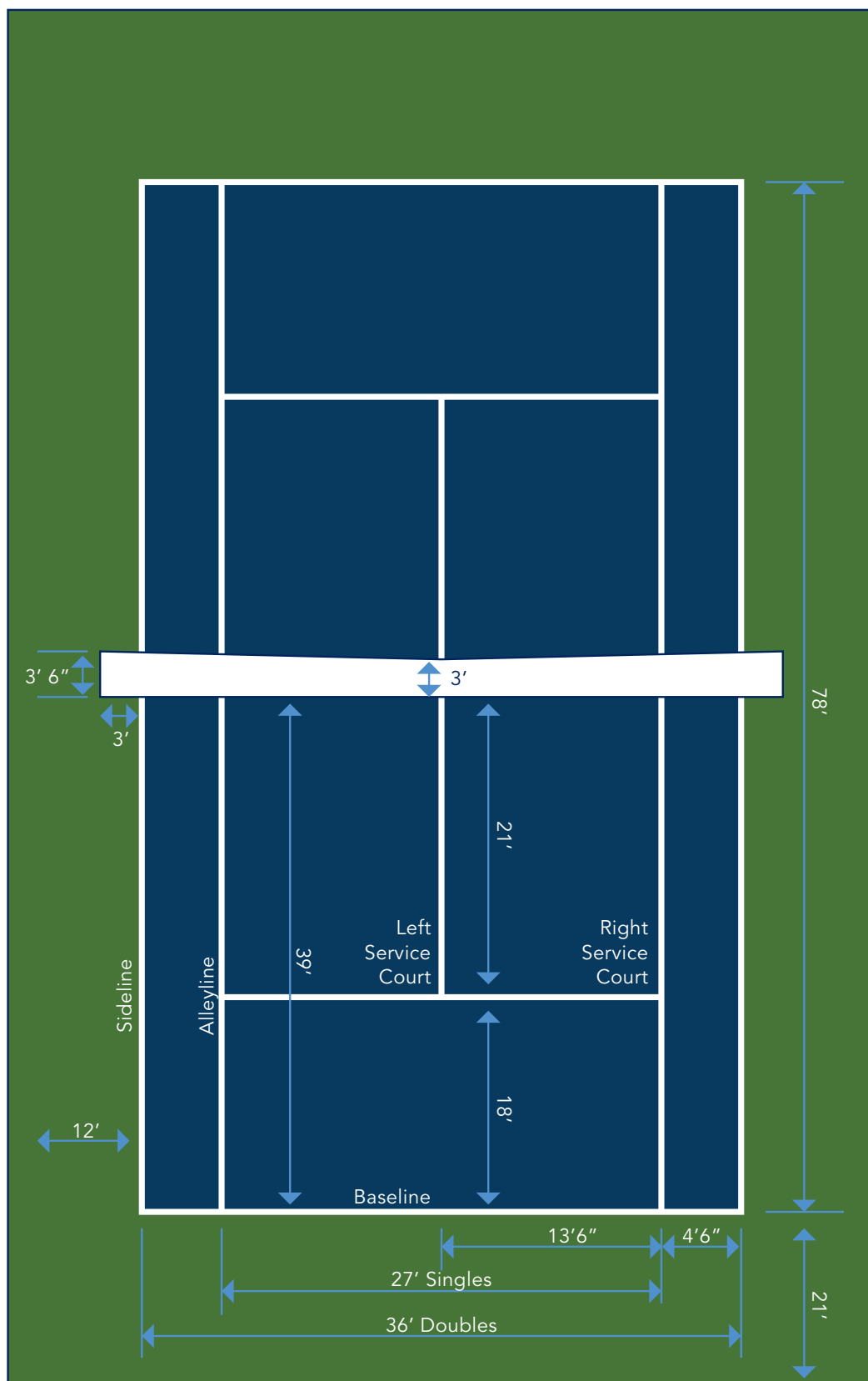
"Are the measurements within the court the same for each type?"

"Is the service box the same for each?"

"Is it important to have all courts the same size? Why or why not?"



TENNIS COURT DIAGRAM



All Lines 2" wide

ACTIVITY 7: WHO WAS ARTHUR ASHE?

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To learn about the life, accomplishments, and principles of Arthur Ashe</p> <p>Collect facts about the life and accomplishments of Arthur Ashe.</p> <p>Listen respectfully to the ideas of others and share their own.</p>	<p>Students conduct research on issues and interests by generating ideas and questions</p> <p>They gather, evaluate, and synthesize data from a variety of sources</p>	<p>What impressed you about Mr. Ashe?</p> <p>What can be challenging about sharing your writing or ideas with others?</p> <p>What can we do to help others feel comfortable when sharing?</p>	<p>Learn about the founders of NJTL and a tennis hero</p>
<p>MATERIALS/TIME</p> <p>Arthur Ashe DVD or YouTube video, instructor made charts, pencils, gathering sheet</p> <p>45 MINUTES</p>			

SERVE

1. Ask: Who was Arthur Ashe and what did he do? Turn and talk to your partner and share what you know about Mr. Ashe.
2. When talking quiets, ask the students to share what either they or their partner knows about Arthur Ashe.

RALLY

1. Tell the students that after they watch the video, they will be gathering ideas on a chart or gathering sheet. They will record: What they see, What they think about it, and What it makes them wonder. If they need to, they may take notes as they view.
2. View Arthur Ashe video (15 minutes)

POINT

1. Prepare and place three charts in the room.
2. Label:
Chart 1 as: "What I See" Chart 2 as: "What I Think About It" Chart 3 as: "It Makes Me Wonder..."
3. Give students markers and ask them to place at least one idea on each chart.
4. Discuss and share ideas written on charts about video.
Ask again, "Who was Arthur Ashe and what did he do?" Ask reflective question.
5. Free write—ask the students to go to their notebooks and write or sketch about Arthur Ashe, or what the video made them wonder about for about five silent minutes.

GATHERING SHEET: ARTHUR ASHE VIDEO

Write or sketch your ideas – share with teammates.

What I saw and heard...

I think...

I will remember that...

This reminds me...

ACTIVITY 8: LEARNING ABOUT ARTHUR ASHE

Making Text to Self-Connections

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Make connections between our lives and Arthur Ashe. Practice strategies for working together	Students use a variety of resources to gather and synthesize information and to create and communicate knowledge.	What did you learn about Arthur that is similar to you and your life?	Learn and record facts about the life of Arthur Ashe. Takes responsibility for behavior
MATERIALS/TIME Mentor video - http://www.biography.com/people/arthur-ashe-9190544 chart paper, markers, notebooks, Gathering Sheet: Biography, Trophy Master, list of achievements 60 MINUTES			

SERVE

1. Ask: Who was Arthur Ashe and what did he do? Turn and talk to your partner, and share what you know about Mr. Ashe.
2. When talking quiets, ask students to share what either they or their partner knows about Arthur Ashe.

RALLY

1. Have children sit with a partner. Tell them that they will be turning and talking to their partner about Arthur Ashe.
2. Before viewing this video, tell students they will need to collect as many facts as they can about Mr. Ashe. Show the short bio of Ashe to the students.

POINT

1. Ask students to work together to complete Gathering Sheet 2 Biography.
2. Ask students to share what they believe is Arthur's greatest accomplishment on the court. Then, discuss what he contributed off the court. Collect these ideas on a chart or board. Add information that did not come up in discussion.
3. Achievements – see attached.
4. After student identifies what they believe to be Mr. Ashe's greatest accomplishment, give students a trophy to dedicate and award to Mr. Ashe. They must include his full name, date, and achievement. For example: Arthur Ashe – 1975 – Wimbledon Men's Champion.
5. Give each student another trophy to award to himself/herself, or to someone else, for an achievement - either on or off court. It can be for something they have done, or something they plan to do in the future.

GATHERING SHEET (2): VIDEO BIOGRAPHY

Write or sketch your ideas—share with a teammate.

Arthur was a citizen of the world. What did Arthur do to make the world a better place?

I will be strong on and off the tennis court. Someday, I will be like Arthur because I will...

Arthur's on-court achievements that impress me the most are...

ARTHUR ASHE TIMELINE

On-Court:

- 1949** – began to play tennis
- 1951** – won his first match
- 1957** – first African American to play in Maryland's Boys Championships
- 1960** – earned spot on U.S. Junior Davis Cup
- 1963** – competed in first Wimbledon, first African American selected for Davis Cup team
- 1965** – won NCAA singles and doubles titles
- 1968** – won US Open men's single, played on winning U.S. Davis Cup team
- 1970** – won Australian Open
- 1973** – first black man to play in South African Open
- 1975** – first African American man to win Wimbledon
- 1981** – accepted captaincy of Davis Cup team
- 1985** – inducted into International Tennis Hall of Fame

Off – Court:

- 1943** – born July 10 to Arthur Sr. and Mattie Ashe in Richmond, VA
- 1947** – learned to read, age 4
- 1961** – graduated first in his high school class, scholarship to UCLA
- 1966** – graduated from UCLA, began 2 year military service as second lieutenant at West Point
- 1967** – published autobiography – Advantage Ashe
- 1968** – co-founded NJTL with Charlie Pasarell and Sheridan Snyder
- 1970** – named goodwill ambassador to Africa
- 1975** – published memoir – Arthur Ashe: Portrait in Motion
- 1977** – married professional photographer Jeanne Moutoussamy
- 1981** – national chairman of the American Heart Association, published Off the Court
- 1986** – daughter Camera Elizabeth, born
- 1988** – Published A Hard Road to Glory – won Emmy award for TV adaptation
- 1993** – died of AIDS related pneumonia on February 6. Awarded presidential Medal of freedom by President Bill Clinton, Days of Grace published



ACTIVITY 9: TEAM PUZZLE

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To design and decorate their piece of a jigsaw to create a sense of belonging Use words and drawings to share important facts about themselves	Students use spoken, written, and visual language to accomplish their own purposes	What do you notice about the completed puzzle pieces? What did you find out from listening to others share their puzzle piece?	Learning to work as an individual and as a member of a team Listen respectfully to the ideas of others and share their own
MATERIALS/TIME blank (medium) puzzle, colored pencils, markers, scrap paper 45 MINUTES			

PREP: Before giving out the pieces, number and mark the direction each piece goes in the puzzle on the back. This makes reassembly easier when the children have finished their work.

SERVE

1. Explain that everyone will be given a piece of a puzzle. On their piece they must include their name but they are free to decorate their piece anyway they like. Show them the direction arrow so they know which way is up.
2. You may use words or drawings to create a self-portrait. Who or what matters to you? What makes you, YOU?

RALLY

1. Brainstorm and make a chart of possible ideas of what they could draw or write on their piece of the puzzle. Write a list of favorite colors, pets, sport teams, etc.
2. Each child will trace his or her puzzle piece on scrap paper. Use this sketch to complete a rough draft.

POINT

1. Using pencil first, place their design and name on their puzzle piece. Then, go over with markers, etc.
2. If time and materials permit, have the students design a second piece working in partners.
3. When finished, ask the students to share their piece and what it says to them. Before students share, model by sharing teacher puzzle piece. Speak slowly and clearly. Ask: What is challenging about sharing your work with others? What can you say or do to make sharing go well? (Listen respectfully, ask a question, pay a compliment, say I like...)
4. If students are taking puzzle pieces home, you might want to glue a strip of magnetic tape on the back for hanging on a refrigerator or tape on a piece of yarn for hanging. If keeping in space, assemble puzzle or glue down to a poster board for hanging on a bulletin board or wall.



ACTIVITY 10: TAP – THINK AND PLAY

Featured Game—Multiplication Tic-Tac-Toe

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To practice and use a wide range of strategies to problem solve</p> <p>To build relationships with others to pose and solve problems</p> <p>To foster positive peer relationships</p>	<p>Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.</p>	<p>How did you show respect today?</p> <p>Is this a game you would play at home?</p>	<p>Developing skills and confidence</p> <p>Playing as both partners and opponents – sportsmanship</p> <p>Taking turns and playing fairly</p>
<p>MATERIALS/TIME</p> <p>variety of learning games including: Scrabble Slam, Set, Multiplication Tic-Tac-Toe, Scattergories, Point-Game-Out</p> <p>45 MINUTES</p>			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, “How will you decide who goes first?” “Whose job is it to clean up and put the games away?” “What happens if someone gets carried away and calls someone a name?”
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.

POINT

1. Set game(s) up on tables with 2-4 children at each game, depending on the rules.
2. Walk to each group and monitor game play. You may want to comment on good sportsmanship, thinking hard, cooperation, and participation as it occurs.

MULTIPLICATION TIC-TAC-TOE

Players use two-color markers (or Xs and Os). The first player chooses two factors (from 1-9 underneath the game board); places a paper clip on each, and puts a marker on the correct product on the game board. The second player moves ONE of the paper clips to a new factor, finds the product, and marks that product with their marker. Play continues until one player has marked four products in a row, column, or diagonal. Note: When moving a paper clip, it’s legal to move it to the same factor as the other paper clip to allow for plays such as 5 X 5.

Use a multiplication table for children who need support with their basic facts!

See Multiplication Table on Page 37.

MULTIPLICATION TIC-TAC-TOE GAME BOARD

Players use two-color markers (or Xs and Os). The first player chooses two factors (from 1-9 underneath the game board); places a paper clip on each, and puts a marker on the correct product on the game board. The second player moves ONE of the paper clips to a new factor, finds the product, and marks that product with their marker. Play continues until one player has marked four products in a row, column, or diagonal. Note: When moving a paper clip, it's legal to move it to the same factor as the other paper clip to allow for plays such as 5 X 5. (Use table on next page)

1	2	3	4	5	6
7	8	9	10	12	14
15	16	18	20	21	24
25	27	28	30	32	35
36	40	42	45	48	49
54	56	63	64	72	81

1 2 3 4 5 6 7 8 9

MULTIPLICATION TABLE

X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

ACTIVITY 11: FINDING AREA

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To have the opportunity to experiment with area To have the opportunity to estimate various areas To have the opportunity to record data in an organized way Have opportunity to measure the length and width of an object using appropriate tools	Mathematics as: Problem Solving, Communication, and Reasoning Computation and Estimation Mathematical Connections Geometry Measurement Recognize the attributes of length and width and area	Did using the tennis court help me to better understand area? Did I put forth my best effort today?	Regions found on the tennis court Critical thinking – making decisions Explore regions found on the tennis courts Handle materials responsibly

MATERIALS/TIME

chart paper, measuring devices, markers, pens, pencils, notebooks, calculators, court diagrams, with and without measurements

45-90 MINUTES

SERVE

1. Discuss and define area. Have students estimate the area of various objects in the room and record these estimates on their t-chart. Now have students measure those objects to see how close their estimation was to the actual area. Record these actual measurements on the t-chart.
2. Now have the students estimate the area of various parts of the court without referring to the giant wall diagram and record these estimates on a t-chart. If some students remember the actual measurements on the court, that is fine.
3. Ask the students: "Which parts of the court do you think have the greatest area? Why?"

RALLY

1. Ask, "Can you name the various parts of the tennis court?"
2. Have the students determine the area of each of the parts of the tennis court using the actual measurements found on the wall diagram.
3. Calculators may be used, if available.

POINT

1. Have students create a list, including a visual representation, of the areas of the various parts of the tennis court. This list should be in least to greatest or greatest to least form.
2. Ask, "What part of the court has the largest area? The smallest area?"

EXTENSION ACTIVITY

Ask the group: "What happens to the area of a rectangle when you change its shape, keeping the perimeter the same length?" "Does the area remain the same?" "How could you get a smaller area?" "How could you get a larger area?"

ACTIVITY 11: FINDING AREA

JUST FOR FUN

How many tennis courts do you think would fit?

On a basketball court?

On a football field?

On a soccer field?

On a baseball field?

On a golf course?

In a Walmart?

On the street in front of where you live?

In your school?

ACTIVITY 12: READ ALOUD AND PERFORM ONE

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>Discuss and provide evidence from the text to support opinions.</p> <p>Make connections between our lives and the book (One).</p> <p>Work together cooperatively in a skit.</p> <p>Listen to a story to generate topics for discussion</p>	<p>Students use a variety of resources to gather and synthesize information and to create and communicate knowledge</p>	<p>What can you do to create more “One-derful” days in your life?</p> <p>What did you notice about HOW I read the story aloud?</p>	<p>Working together, as a team, to accomplish a goal.</p> <p>Reflects on behavior</p>
<p>MATERIALS/TIME</p> <p>Mentor Text: One, chart paper, colored markers, hole punch, string, construction paper with colors whites, red, orange, blue, yellow, purple, green, gray</p> <p>45 MINUTES</p>			

Making Text to Self-Connections

SERVE

1. Tell the students you will be reading a very special book to them. The book is titled One and is written by Kathryn Otoshi. Explain that there is a conflict or problem in the story between the characters.

RALLY

1. Read the book aloud, while showing the illustrations. Discuss the story with the children. Remind students that when we talk in groups, one person speaks at a time and the others listen and try to build upon what that person said.
2. Ask the students to turn to a partner and discuss the question, “What happens in this story? What did you notice? Who are you most like in the story?”
3. Ask each group to share their ideas they discussed as partners. Lead a class discussion, using the following ideas:
Describe what you think is going on, what did you see? What does it make you wonder? What is the problem or conflict in the story? How does the problem get resolved? How would you describe the characters? How does Red change in the story? What in the story makes you think that? What other characters change in the story? How do they change?
4. After the discussion, ask students to think about an idea or tagline that describes the most important theme in the story. Answers could include - Say no to bullies. Friends need to help one another. Speak up for yourself. It just takes one. We all count.
5. Record answers on board or chart paper.

POINT

1. Ask seven students to act out the story (Role Play)
2. After you have assembled a cast, one option could be that they wear a piece of construction paper showing their color. Punch two holes in paper and attach a string large enough to be worn around their necks or waist. Once they have their color, have them write their number on the other side. Look in the book and show actors that 1 is grey, 2 is yellow, 3 is green, 4 is purple, 5 is orange, 6 is blue, and 7 is red.
3. Have each color play their part/role as you read the story aloud slowly. *Make the first reading a rehearsal. Discuss the characteristics of each color (i.e., blue is quiet, orange is outgoing, etc.) and how they might show that in their performance. For example, "How would red walk when he is angry? How would you show that Blue is quiet?"

***You can show the YouTube video of children acting this book with Kathryn Otoshi.**

(<http://www.youtube.com/watch?v=>), or simply practice until students feel comfortable.

EXTENSION ACTIVITY

Once the students practice and feel confident, video their performance and share with an audience (i.e., family, teachers, volunteers, etc.), or have the students perform the skit live for their tennis coach or other groups. Invite families to a "One-derful" gathering and showcase tennis skills and skit.

Go to The Tangled Ball website, <http://www.tangledball.com>, to see more activities.

ACTIVITY 13: SOMETIMES IT JUST TAKES ONE

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Identify what people, places and things are valued.	Students use a variety of resources to gather and synthesize information, and to create and communicate knowledge.	What can you do to create more wonderful days in your life?	View tennis as a link to special people in their lives and to Arthur Ashe.
MATERIALS/TIME Mentor Text: One, large number one template, pencils, markers, scissors 45 MINUTES			

SERVE

1. Review the book *One*, which was read previously. If a lot of time has passed since students heard the book, re-read it to them.

RALLY

1. Remind the students that every member of their team is important and each of their stories is important. Ask them how sharing should look and sound (i.e., eyes on the speaker, one person at a time speaks, listen as others speak, etc.)

POINT

1. Distribute the #1 paper template (see next page). Have each student select a piece of colored construction paper, trace, and cut out a large #1.
2. Ask students to write Arthur Ashe at the top of their #1. Discuss how Arthur was a leader or #1 in life. Answers could include - Arthur stood up for others. Arthur shared his skills with others. Arthur wrote books. Arthur showed respect on/off the tennis court.
3. Record student answers on chart paper or board. Have students select one way Arthur was a #1, and have them write that answer on their own #1 paper.
4. Ask students to think of people they know who behave like #1. Then ask them to write the names, their relationship to them, and how they spend time together on their #1 paper. To help, remind them of people they spend time with at birthdays, holidays, Sunday afternoons, etc. Ask them to write down:

Names

Relationship (brother, friend, aunt, teacher, coach)

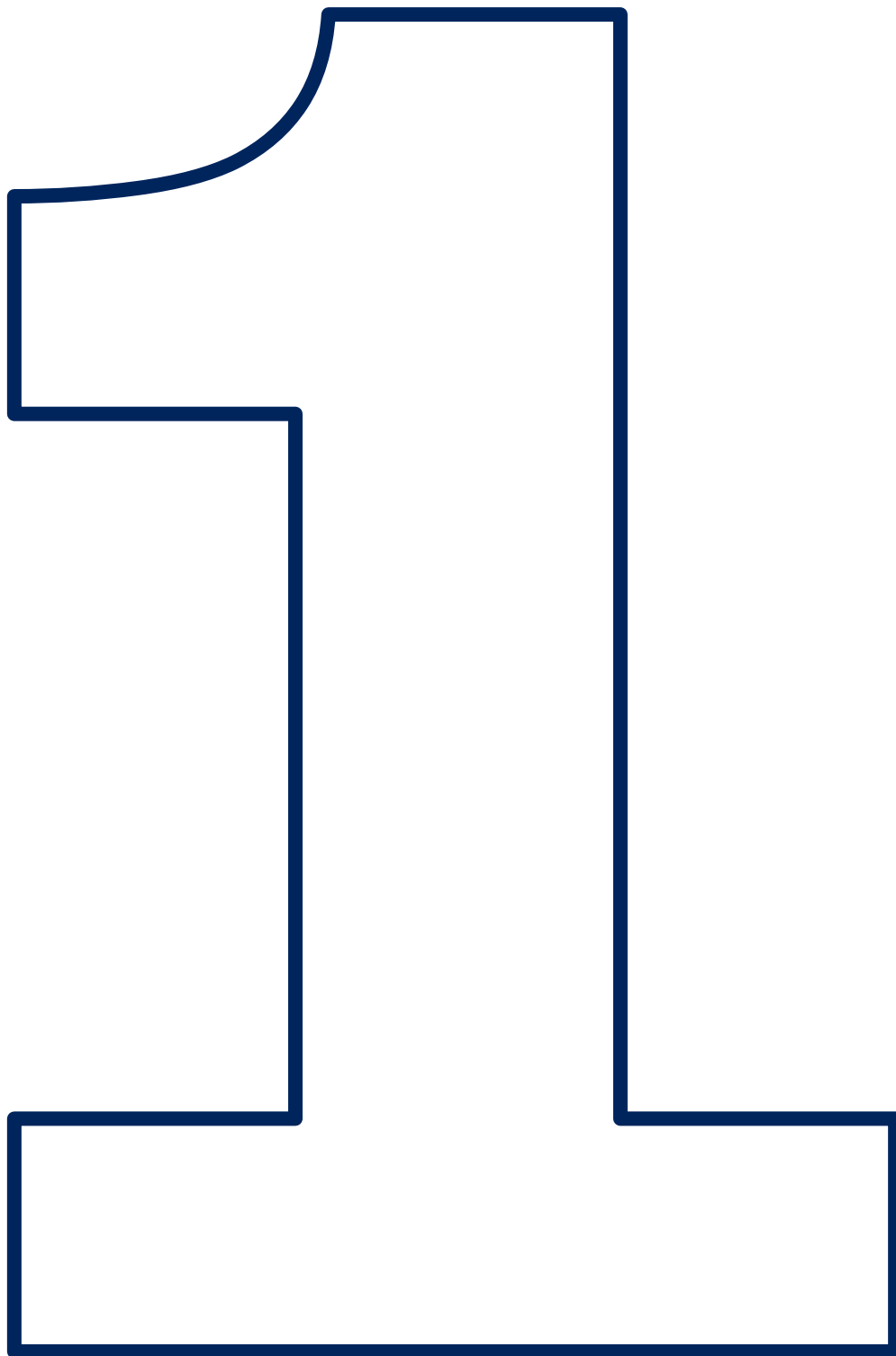
How they spend their time together. (talking, playing games, shooting hoops, tennis, watching television)

Ask the students to look over their lists and see if they can find 3 words to best describe the qualities of their #1's. Example qualities could be kindness, sense of humor, brave, happy, strong, respectful, appreciative, etc. Add these words to their #1 paper.

5. Encourage students to write more and sketch about their important #1's, share, and display in the room or tennis facility.

EXTENSION ACTIVITY

Students write a narrative piece about a special person, or write a thank-you letter to a special person.



ACTIVITY 14: GLYPH WITH BEADS — ONE

Making Text to Self-Connections

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Identify activities shared with teammates. Make connections between our lives and Arthur Ashe. Create a glyph.	Students develop an understanding of diversity in language use, patterns and dialects across cultures, ethnic groups, geographic regions and social roles. Students use spoken, written and visual languages to accomplish their own purposes	How did you show respect today? What was fun about today? How did you help others share their glyph?	Learning and sharing facts about yourself with teammates.
MATERIALS/TIME Mentor Text: One, chart paper, pencils, markers, beads, elastic string or jute 45 MINUTES			

SERVE

1. In the book *One*, Ms. Otoshi used colors and numbers to tell a story. Today we will be using colors, numbers, and beads to tell your story. You will be creating a glyph.

RALLY

1. Explain that a glyph is a way to represent an idea or display a variety of information to tell a story. We will create a glyph to tell about ourselves. For our glyphs, we will be using beads. First, like a map, a legend is required to read a glyph. A legend will also help us plan our glyph.
2. Create a chart to demonstrate how to write a legend for the glyphs. Record number of beads and colors on chart paper with a brief description of what they represent. It is important for students to have this visual reference to guide them.
3. Have the students write their plan or legend on a piece of paper. Explain to the students that each bead will stand for something or someone who matters to them. For example, we will all use one yellow bead to honor Mr. Ashe. Arthur Ashe liked to string beads with his daughter Camera. His favorite color bead was yellow so we will all use one yellow bead on our glyphs to honor Mr. Ashe. If your family is important to you, what color would you use to represent your family? Write it down and next to it write a number of beads you would use to show your family. For example, my favorite color is red and I have 4 people in my family, so I might use 4 red beads to represent my family. On the next page is a sample of the glyph.

Here is a sample legend/plan for a glyph:

- 1 Yellow Bead – we all honor Mr. Ashe
- 4 Red Beads – number of people in my family
- 7 Blue Beads – number of years playing tennis
- 4 White Beads – one per foot of my height
- 10 Green Beads – my age

These are only examples! Students will design their glyph to represent their own interests and backgrounds. Other areas of interest can include pets, grandparents, school colors, team colors, sports and hobbies.



POINT

1. When beading is finished, ask the students to share their glyphs with a partner. Encourage students to listen and ask questions to learn more about their partner's glyph (life). For example, if someone has many beads for years playing tennis, you might ask how old were you when you started to play? Where did you first play?
2. After sharing, ask students a reflective question. Did they help a teammate? Did they participate fully? How did they do sharing materials? — These are some of the ways we respect each other.

EXTENSION ACTIVITY

If you were to make a glyph bracelet for Mr. Ashe, based on what you know about him, how would you design it? What color beads would you use? What would each bead stand for? Draw Mr. Ashe's bracelet - include a legend explaining what each bead represents. After sketching Mr. Ashe's bracelet, share with a teammate, and staple this sheet into your writer's notebook.

Alternatively, write a story about yourself using your glyph. Have each colored bead represent a paragraph in your story. Share your story with a friend, your tennis coach, or family.

CHAPTER 2: THINK AND PLAY GAMES

Activity 15: Tap – Think and Play

Featured Game—Sudoku and Kenken Puzzles

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To use logic to solve puzzles.	Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.	How did you handle the challenges presented in these puzzles?	Developing skills and confidence.
To practice mathematical operations.		Is this a game you would play at home?	Playing as both partners and opponents – sportsmanship.
To foster positive peer relationships.			Taking turns and playing fairly.
MATERIALS/TIME Copies of Sudoku and KenKen Puzzles 45 MINUTES			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or working alone but assisting our friends if they need support.
2. Introduce and show the featured game(s) to the children.

RALLY

1. The objective of SUDOKU is to enter a digit from 1 through 9 in each cell, in such a way that:
 - Each horizontal row (across) contains each digit exactly once.
 - Each vertical column (up and down) contains each digit exactly once.
 - Each sub-grid or region (3x3 box) contains each digit exactly once.
2. The objective of KENKEN is:
 1. Every square in the grid will contain one number.
 2. In a 4 x 4 puzzle, use the numbers 1–4. In a 5 x 5 puzzle, use the numbers 1–5. In a 6 x 6 puzzle, use the numbers 1–6.
 3. Do not repeat numbers in any row (across) or column (up and down).
 4. A cage is a heavily outlined set of squares. The numbers in the squares within a cage must combine (in any order) to produce the target number in the top corner. You must use the mathematical operation (+, -, x, ÷) next to the target number.
 5. Cages with just one square should be filled in with the target number in the top corner. (Hint: these should be filled in first as a starting point.)

POINT

1. Puzzles can be found online and in print. Various levels of difficulty are available so that children can find success when first learning and continue to be challenged as they improve their skills.
2. Below are examples of both Sudoku and KenKen puzzles. Solutions are also included for these two puzzles.

Sudoku Sample

1								3
		7	2	6		4	8	
4			9	3	5			6
	3		4	8		2		
	4	1	6		9	3		
		6				8	9	
5	7	8		4				2
			3				7	
2								5

Kenken Sample

4	4+		9+
3+	3-		
	1-		
1-		3-	

Sudoku Solution

1	6	9	8	7	4	5	2	3
3	5	7	2	6	1	4	8	9
4	8	2	9	3	5	7	1	6
9	3	5	4	8	7	2	6	1
8	4	1	6	2	9	3	5	7
7	2	6	5	1	3	8	9	4
5	7	8	1	4	6	9	3	2
6	9	4	3	5	2	1	7	8
2	1	3	7	9	8	6	4	5

Kenken Solution

4	4+		9+
4	1	3	2
3+	3-		
2	4	1	3
	1-		
1	3	2	4
1-		3-	
3	2	4	1

ACTIVITY 16: SPARKLE SPELLING GAME

Featured Game—Sparkle Spelling Game

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To build spelling skills with others	Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.	How did you show respect today?	Developing skills and confidence
To foster positive peer relationships		Is this a game you would play at school?	Listening and monitoring game play Taking turns and playing fairly
MATERIALS/TIME List of spelling words—may be words related to tennis, (serve, point, ace, rally, bounce, out) area large enough for group to stand in a circle. 30 MINUTES			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, "How will you decide who goes first?" "What happens if someone gets carried away and calls someone a name?" "How should you behave when it is not your turn?"
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.
3. Ask students to list words that are related to tennis or any other topic you are studying. These words will make up the spelling list.

POINT

1. Student will play a game that challenges their spelling skills. Have the class form a large circle in an open area. Ask them to stay standing.
2. Tell the students that you are going to give them a spelling word and that it is very important for them to pay attention.
3. Say a spelling word, e.g. "tennis."
4. The first person will say the word "tennis."
5. The next student will say the first letter of the word, "t." If a student misspells the word, they have to sit down.
6. Have students go around the circle, spelling out the word "tennis", one letter at a time
7. Once the all of the letters have been correctly spelled out, the next student says the whole word, "tennis."
8. The next person in the circle says "sparkle" and the person after them sits down.
9. Start the game over when there is one student left standing. Warning!!! This game can become very popular!!

ACTIVITY 16: SPARKLE SPELLING GAME

OVERVIEW:

Student will play a game that challenges their spelling skills.

OBJECTIVES:

The students will:

1. Practice their spelling vocabulary.
2. Develop a positive attitude towards learning.
3. Practice their listening skills.

RESOURCES/MATERIALS:

- A list of words
- Area large enough for the whole class to stand in a circle

ACTIVITIES AND PROCEDURES:

1. Have the class form a large circle in an open area. Ask them to stay standing.
2. Tell the students that you are going to give them a spelling word and that it is very important for them to pay attention.
3. Say a spelling word, e.g., "tennis."
4. The first person will say the word "tennis."
5. The next student will say the first letter of the word, "t." If a student misspells the word, they have to sit down.
6. Have students go around the circle, spelling out the word "tennis."
7. Once all of the letters have been correctly spelled out, the next student says the whole word.
8. The next person in the circle says "sparkle" and the person after them sits down.
9. Start the game over when there is one student left standing. Warning!!! This game can become very popular!!

ACTIVITY 17: SET

Featured Game—Set

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To practice and use a wide range of strategies to problem solve</p> <p>To build relationships with others to pose and solve problems</p> <p>To foster positive peer relationships</p>	<p>Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.</p>	<p>How did you show respect today?</p> <p>Is this a game you would play at home?</p>	<p>Developing skills and confidence</p> <p>Playing as both partners and opponents – sportsmanship</p> <p>Taking turns and playing fairly</p>
<p>MATERIALS/TIME</p> <p>List of spelling words—may be words related to tennis, (serve, point, ace, rally, bounce, out) area large enough for group to stand in a circle.</p> <p>30 MINUTES</p>			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, “How will you decide who goes first?” “Whose job is it to clean up and put the games away?” “What happens if someone gets carried away and calls someone a name?”
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.

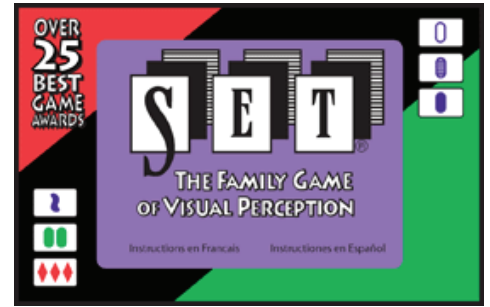
POINT

1. Set game(s) up on tables with 2-4 children at each game, depending on the rules.
2. Walk to each group and monitor game play. You may want to comment on good sportsmanship, thinking hard, cooperation, and participation as it occurs.
3. Have fun!

The object of SET is to identify a 'set' of three cards from 12 cards laid out on the table. Each card has a variation of the following four features:

- (A) Color: Each card is red, green, or purple.
- (B) Symbol: Each card contains ovals, squiggles, or diamonds.
- (C) Number: Each card has one, two, or three symbols.
- (D) Shading: Each card is solid, open, or striped.

A "SET" consists of three cards in which each feature is EITHER all the same on each card OR is all different on each card. That is to say, any feature in the 'Set' of three cards is either common to all three cards or is different on each card.



ACTIVITY 18: SCRABBLE SLAM

Featured Game—Scrabble Slam

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To practice and use a wide range of strategies to problem solve</p> <p>To build relationships with others to pose and solve problems</p> <p>To foster positive peer relationships</p>	<p>Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.</p>	<p>How did you show respect today?</p> <p>Is this a game you would play at home?</p>	<p>Developing skills and confidence</p> <p>Playing as both partners and opponents – sportsmanship</p> <p>Taking turns and playing fairly</p>
<p>MATERIALS/TIME</p> <p>variety of learning games including: Scrabble Slam, Set, Multiplication Tic-Tac-Toe, Scattergories, Point-Game-Out</p> <p>45 MINUTES</p>			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, "How will you decide who goes first?" "Whose job is it to clean up and put the games away?" "What happens if someone gets carried away and calls someone a name?"
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.

POINT

1. Set game(s) up on tables with 2-4 children at each game, depending on the rules.
2. Walk to each group and monitor game play. You may want to comment on good sportsmanship, thinking hard, cooperation, and participation as it occurs.
3. Have fun!

Directions are located in the game box.

ACTIVITY 19: SCATTERGORIES

Featured Game—Scattergories

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To practice and use a wide range of strategies to problem solve To build relationships with others to pose and solve problems To foster positive peer relationships	Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.	How did you show respect today? Is this a game you would play at home?	Developing skills and confidence Playing as both partners and opponents – sportsmanship Taking turns and playing fairly
MATERIALS/TIME variety of learning games including: Scrabble Slam, Set, Multiplication Tic-Tac-Toe, Scattergories, Point-Game-Out 45 MINUTES			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, “How will you decide who goes first?” “Whose job is it to clean up and put the games away?” “What happens if someone gets carried away and calls someone a name?”
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.

POINT

1. Set game(s) up on tables with 2-4 children at each game, depending on the rules.
2. Walk to each group and monitor game play. You may want to comment on good sportsmanship, thinking hard, cooperation, and participation as it occurs.
3. Have fun!

Directions are found in the game.

ACTIVITY 20: DUECE, ACE, OUT

Featured Game—Deuce, Ace, Out

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To practice and use a wide range of strategies to problem solve To build relationships with others to pose and solve problems To foster positive peer relationships	Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.	How did you show respect today? Is this a game you would play at home?	Developing skills and confidence Playing as both partners and opponents – sportsmanship Taking turns and playing fairly
MATERIALS/TIME variety of learning games including: Scrabble Slam, Set, Multiplication Tic-Tac-Toe, Scattergories, Point-Game-Out 45 MINUTES			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, “How will you decide who goes first?” “Whose job is it to clean up and put the games away?” “What happens if someone gets carried away and calls someone a name?”
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.

POINT

1. Set game(s) up on tables with 2-4 children at each game, depending on the rules.
2. Walk to each group and monitor game play. You may want to comment on good sportsmanship, thinking hard, cooperation, and participation as it occurs.

Have fun!

The objective of ‘Deuce, Ace, Out’ is to practice making deductions.

ACTIVITY 20: DEUCE, ACE, OUT

PURPOSE

To practice making deductions by the process of elimination and to reinforce the concept of place value.

RULES

- The goal is to guess the “server’s” secret three-digit number.
- The digits in the secret number must be all different; for example, 332, 919, and 444 are not allowed.
- The “server” will give clue responses to each guess as follows (and never states which digits are the ones correct):

OUT – means none of the digits is correct

DEUCE – means one of the digits is correct, but it is in the wrong place

ACE – means one of the digits is correct and in the correct place

EXAMPLE

The secret number is 793. (Only the “server” knows this).

The person “receiving” makes a guess and the “server” responds:

<u>Receiver</u>	<u>Server</u>
516	OUT
316	DEUCE (the 3 is correct, but in the wrong place)
915	DEUCE (the 9 is correct, but in the wrong place)
713	ACE, ACE (the 7 and 3 are correct, and in the correct place)
798	ACE, ACE (the 7 and 9 are correct, and in the correct place)
793	ACE, ACE, ACE (Correct answer!)

Players should keep a record of the guesses and the server’s response.
(You can do this on the board/overhead projector)

If you are the server, write your number on a slip of paper to refer to as you give the clues!

The original game, PICO-FERMI-BAGLE was developed by Lawrence Hall of Science and Math in Berkeley and is documented in the book named Family Math.

ACTIVITY 21: ALL GAMES

Featured Game—All Games

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To practice and use a wide range of strategies to problem solve</p> <p>To build relationships with others to pose and solve problems</p> <p>To foster positive peer relationships</p>	<p>Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.</p>	<p>How did you show respect today?</p> <p>Is this a game you would play at home?</p>	<p>Developing skills and confidence</p> <p>Playing as both partners and opponents – sportsmanship</p> <p>Taking turns and playing fairly</p>
<p>MATERIALS/TIME</p> <p>Variety of learning games including: Scrabble Slam, Set, Multiplication Tic-Tac-Toe, Scattergories, Point-Game-Out</p> <p>45 MINUTES</p>			

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, “How will you decide who goes first?” “Whose job is it to clean up and put the games away?” “What happens if someone gets carried away and calls someone a name?”
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.

POINT

1. Set game(s) up on tables with 2-4 children at each game, depending on the rules.
2. Walk to each group and monitor game play. You may want to comment on good sportsmanship, thinking hard, cooperation, and participation as it occurs.

HAVE FUN!

ACTIVITY 22: TAP – MULTIPLICATION ACE©

FEATURED GAME—MULTIPLICATION ACE©

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To practice and use a wide range of strategies to problem solve	Students participate as knowledgeable, reflective, creative, and critical members of a variety of literacy and math communities.	How did you show respect today?	Developing skills and confidence
To build relationships with others to pose and solve problems		Is this a game you would play at home?	Playing as both partners and opponents – sportsmanship
To foster positive peer relationships		Computation and Estimation	Are you improving your knowledge of your times tables?
Mathematical Connections			

MATERIALS/TIME

Variety of learning games including: Scrabble Slam, Set, Multiplication Tic-Tac-Toe, Scattergories, Point-Game-Out

45 MINUTES

SERVE

1. Explain that on game day we will be having even more fun learning. We will be learning new games and learning how to play fairly with a partner or with the group.
2. Introduce and show the featured game(s) to the children.

RALLY

1. Review and discuss basics of game play with the children. For example, ask, “How will you decide who goes first?” “Whose job is it to clean up and put the games away?” “What happens if someone gets carried away and calls someone a name?”
2. Read the directions to the games to be played that day. Check for understanding by having one or two children explain the game in their own words.

POINT

1. Set game(s) up on tables with 2-4 children at each game, depending on the rules.
2. Walk to each group and monitor game play. You may want to comment on good sportsmanship, thinking hard, cooperation, and participation as it occurs.

HAVE FUN!

MULTIPLICATION ACE ©

CARD GAME

Tennis Inspired Multiplication Fact Practice

Cards: 4 sets of number cards (or playing cards), 1-10 (or 1-12)

Players: 2

Game Chart:

	Game 1	Game 2	Game 3	Game 4	Game 5	Game 6 (Set)
Player 1						
Player 2						

Rules:

1. Cards are divided into red and blue and given to the 2 players.
2. To determine who goes first, each player pulls one card from their pile. The player with the highest number goes first.
3. Each player turns over 1 card from their pile and 'Player A' calls out the product of the two numbers and takes the cards.
4. Play continues, with each player turning over one card at a time, alternating between 'Player A' and 'Player B'.
5. If the product is 15, 30, or 40, the player calls out the product and says 'point', they then put a checkmark on their 'game chart'.
6. If a player calls out the correct product but fails to say 'point' within 3 seconds, their opponent may call point and place the check mark on their 'game chart'.
7. If two of the same numbers are turned up, the player calls out the product and 'deuce' and then puts a checkmark on their 'game chart'.
8. If a player calls out the correct product but fails to say 'deuce' within 3 seconds, their opponent may call 'deuce' and place the check mark on their 'game chart'.
9. When a DEUCE occurs, the next turn consists of three cards down and the fourth card up. In this case, the first person to call out the correct product of the up cards wins all the cards.

Drills:

1. To practice tennis alone, you can hit against a wall. To practice your multiplication facts alone, you can use the number cards in pairs. Turning over 2 cards at a time, see how quickly you can go through the 20 facts. Facts that give you trouble can be put aside to be practiced later. How long did it take you to get through the 20 facts?
2. When you think you know your facts really well, take the deck and turn one card over and then the next. What is the product for those two numbers? Now turn the next card over and multiply it times the previous card. Example: Card 1 (4) times Card 2 (6) equals 24. Now, Card 2 (6) times Card 3 (9) equals 54. What's your best time for the 39 facts you just completed?

CHAPTER 3: SUPPLEMENTAL LITERACY ACTIVITIES

ACTIVITY 23: THE BEST PART OF ME—READ ALOUD

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To state that each of us are valuable To identify what is valuable in ourselves and others To create a digital photograph To foster positive peer relationships	Students use spoken, written, and visual language to accomplish their own purposes. Students participate as knowledgeable, reflective, creative and critical members of a literate community.	What did you learn about a teammate today? How did you show your partner that you were listening today?	To listen, attend and participate with a partner and individually
MATERIALS/TIME Digital camera, Book connection: The Best Part of Me 45 MINUTES			

SERVE

1. Show the cover of The Best Part of Me.
2. Ask, “What is the best part of you? Is it your hair? Your legs? Your smile?”
3. Turn and talk to your partner about the best part of you. If needed, model by telling the students about the best part of you and tell why it is the best part.
4. When talking quiets, ask the students to share what their partner said was the best part of them.

RALLY

1. Read the book aloud to the group and share the photographs. It is important that the students have time to discuss the writing and the photos. Ask them, “What do you notice about the writing or photo? What stands out to you? What questions do you have? How is this photo like/unlike you?”

POINT

1. Ask the students to identify the best part of them.
2. Before taking a photo, ask the students to find an uncluttered spot to take the picture. Their partners will be taking their pictures. Encourage the students to take three or more photos of their partner’s best part from different angles or poses – get really close, kneel on the ground, stand on a chair etc.
3. Have each pair take multiple pictures of each other.

ACTIVITY 24: THE BEST PART OF ME—WRITING

Making Text to Self Connections—The Best Part of Me

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To state that each of us are valuable</p> <p>To identify what is valuable in ourselves and others</p> <p>To use a digital photograph to create writing</p> <p>To foster positive peer relationships</p>	<p>Students use spoken, written, and visual language to accomplish their own purposes.</p> <p>Students participate as knowledgeable, reflective, creative and critical members of a literate community.</p>	<p>What did you learn about a teammate today?</p> <p>How did you show your partner that you were listening today?</p> <p>What helped the writing go well today?</p>	<p>To listen, attend and participate with a partner and individually</p>
<p>MATERIALS/TIME</p> <p>Copies of photos taken in Activity 39, notebooks, pencils</p> <p>Book connection: The Best Part of Me</p> <p>45 MINUTES</p>			

SERVE

1. Distribute prints of the photographs.
2. Ask the students to select the best one.

RALLY

1. Gather the students together and ask someone to volunteer to share their picture and tell about it. Remind students that when we share it is important to listen quietly and with respect.
2. When the students are sharing their photos, ask them questions to help them be specific and tell stories rather than simply I like my eyes. If stuck, prompt them with a beginning, "I like my eyes because..."

POINT

1. Pre-writing, discuss and list verbs or action words the students may use in their writing. Words should be listed on a chart so students can refer to them when they write.
2. Ask the students, if you chose your legs, what are some things your legs can do? List words like run, jump, climb, kick. Repeat with hands and list words like clap, pray, swing a racket, grab, throw a snowball, etc. Post chart where all can see it.
3. In writer's notebooks, ask the students to write all about the Best Part of Me. If stuck they can start with... I like my ____ because... or they can make their own list of action words before writing.
4. Give 10 minutes of silent writing. Read over their shoulders and offer encouragement to anyone who can't think of anything and help them write a list of verbs to get started.

5. When everyone has something to share, have them meet with their partners and share what they have written. Partners may offer compliments.
6. When everyone has 3-5 sentences (or more) to go with their photographs, celebrate and share.

SHARING

You can have the students write a “good copy” and glue it to a large piece of construction paper with their photo for display.

- If possible, make additional copies so they can take a copy home to share with families.
- If possible, make another copy for your own version of the Best Part of Me. Each child can contribute a photo and writing for a group book.

ACTIVITY 25: ACROSTIC POEM

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To write one or more poems while working with a partner Create a sense of connectedness by writing and sharing writing together	Students employ a wide range of strategies as they write	How did you show respect today?	Learning the language of tennis Sharing with partners
MATERIALS/TIME Samples of acrostic poems, chart paper, notebooks, pencils and markers 45 MINUTES			

SERVE (Whole Group Activity)

- Write the letters T-E-N-N-I-S vertically on the board or chart paper.
- Explain that each line of the poem must begin with the first letter on each line as it relates to tennis. For example:
Teamwork or Timing or Technique
Enthusiasm or Energy ...
- Continue writing until you have a Tennis acrostic completed with your group.

RALLY (Working with a Partner)

- Write the letters R-E-S-P-E-C-T vertically on the board or chart paper.
- Tell the students to write the letters to the word R-E-S-P-E-C-T into their notebooks skipping a line between each letter. Then they will write a word or phrase about respect beginning with each letter.
- Remind them they do not have to begin with the letter R, they can begin with any letter.

POINT

- Students work with a partner to write their acrostic poem on RESPECT in their notebooks.
- Gather students together to share their poems with small or large groups.
- Invite the students to choose their best poem and publish it on a clean sheet of paper.
- When you notice students being respectful, stop and say so. For example, "I see Taylor is being respectful by taking turns." Ask respectful question to the group or have them write answer in their journals.
- Extension ideas: Encourage the students to illustrate their poems for display.

The students can draft additional poems using their names, team names, etc.

Tennis is my favorite sport
Everyone can play
Need lots of energy
Need focus
I love to win
Sportsmanship a must

Tremendous
Energy
Needed
Never give up
I work on my serve
Score

Try
Every time
Never quit
Need power
I play hard
Serves are key

Tennis
Energy
New
Net
Improve
Serve

ACTIVITY 26: SOCIAL TRAITS POSTERS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To create a drawing or photo that demonstrates knowledge of positive social traits	To develop an understanding of and respect for diversity in language use, patterns and dialects across cultures, ethnic groups, geographic regions and social roles.	What did you learn about someone else today? What did someone learn about you?	Learning to work with partners
MATERIALS/TIME Leader made chart of good social skills (attached), chart paper, pencils, crayons, colored paper, digital camera optional 45 MINUTES			

SERVE

1. Ask the students, "Show me by a raise of hands, how many of you enjoy hanging out with your friends or family? How many of you enjoy playing games or talking to your friends?"
2. Explain to the students that when they are enjoying these moments with friends and family, they are being social.
3. Ask the students, "How do you feel when a friend or a family member doesn't treat your personal items in a nice way or teases you?"
4. Discuss "What are the types of things that friends do for one another?"

RALLY

1. Tell the students that there are important ingredients that must be in all relationships.
2. Ask if one kid could give you one or two of the ingredients. For example: respect, honesty...
3. Form small groups and have the students brainstorm and record in their notebooks, additional ingredients all relationships must have.
4. Gather the students together and display the chart of good traits that was prepared by the teacher (See Attachment).
5. Have the students share and compare their list to the teacher's.
6. Add any new traits shared by the students to the teacher's list.

POINT

1. Explain to the students that they will create a poster that has the ingredients for making and keeping friends.
2. Have the students select two traits from the chart to record in their notebook as a rough draft.
3. Beside each trait explain, sketch and or take a picture of what the trait looks like and why it's important.

ACTIVITY 26: SOCIAL TRAITS POSTERS

Ask students to write trait at the top of poster paper. Place photo or sketch on poster paper. Tell why this is an example of the social trait or tell about a time you or someone you know demonstrated this trait.

GOOD SOCIAL TRAITS

• Cooperation	• Being patient
• Sharing	• Using good manners
• Participation	• Following directions
• Helping Others	• Taking turns
• Listening	• Being polite and courteous
• Respecting ourselves, others, and items	• Honesty
• Being responsible	• Accepting differences

ACTIVITY 27: NOTHING BUT TROUBLE: ALTHEA GIBSON

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To listen and respond to text read aloud.</p> <p>To make a connection to the story to deepen understanding.</p> <p>To create artwork recording qualities of Althea Gibson and themselves.</p>	<p>Students use spoken, written, and visual language to accomplish their own purposes.</p> <p>Students participate as knowledgeable, reflective, creative and critical members of a literate community.</p>	<p>What did you learn about Althea Gibson today?</p> <p>How did you participate today?</p> <p>What are you wondering?</p>	<p>To listen, attend and participate with a partner and individually.</p> <p>To learn about the first African American to compete for and win the Wimbledon Cup.</p>
<p>MATERIALS/TIME – 45–75 minutes</p> <p>Mentor Text: Nothing but Trouble: The Story of Althea Gibson, blank index cards, crayons, watercolors.</p>			

Prep: Preview and read the book silently and then aloud before reading it to the children. Practice showing the pictures, reading slowly and with some expression.

SERVE

1. Prepare to read the book by telling the students something about Wimbledon. Wimbledon is the oldest tennis tournament in the world, considered by many to be the most prestigious. The championships have been held in Wimbledon, London, since 1877. It is one of the four Grand Slam tennis tournaments. Wimbledon is the only Major still played on grass, the game's original surface, which gave the game of lawn tennis its name.
2. The tournament takes place over two weeks in late June and early July, culminating with the Ladies' and Gentlemen's Singles Final. Each year, five major events are contested, as well as four junior events and three invitational events.
3. Wimbledon traditions include a strict dress code for competitors, the eating of strawberries and cream by the spectators and Royal patronage. The tournament is also notable for the absence of sponsor advertising around the courts. In 2009, Wimbledon's Centre Court was fitted with a retractable roof to prevent rain delaying and interrupting Centre Court matches during the tournament.

RALLY

1. Introduce the book, Nothing but Trouble. Say, "Today we are going to read a book called Nothing but Trouble: The Story of Althea Gibson. The illustrator and the author left us clues as to what this book is about. Just by looking at the cover and back cover, think about what you think this book is about. What do you know about Althea Gibson? How old is she on the cover? What do the words and pictures hint about her? Turn and talk to your partner.
2. After each partner has talked, ask them to report to the group. Ask, "What did your partner predict about this book? Let a few pairs respond, Then ask a follow-up question: " Did you notice the colors the illustrator used over her shoulder and feet? Why do you think he did that? Where do you think she might be going?"

POINT

1. Read the dedication page. Explain that a mentor is someone who helps you to learn something new. Read slowly and clearly pages 1-3. On page 4 and when you read the line, "...you can't make a sport out of nickin' sweet potatoes. That's against the law," state that nickin' is a slang expression for stealing.
2. Stop on the two page spread on pages 4 and 5. Ask, "What do you now know about Althea? Answers could include: she plays basketball, she breaks rules, she's a fast runner. she steals potatoes, she loves recess, she lives with her mom and daddy.
3. On the next page, pause and explain Charlie Parker and Sugar Ray. Charles Parker, Jr. was an American jazz saxophonist and composer. Sugar Ray Robinson was a professional boxer.
4. Continue reading, and after a few more pages, ask again, "Now, what do we know about Althea?" Continue reading to the end of the book. Share the end pages with the tennis balls forming a time line of events.
5. Ask, "What are some words that describe Althea. Make a list on the board or chart paper. Words could include : athletic, strong, fast, determined, trouble, competitive, wild, talented, winner, smart, dreamer, etc. Accept any reasonable response. Keep this list for a second activity.
6. Direct the children to take a few minutes to make a similar list about themselves. List a few ideas on the board and then let them work. Encourage them to write as many as they can. Share words and encourage students to record any words they hear that apply to them. Keep this list for next activity.
7. Follow-up Activity – review the lists of words describing Althea and the students. Give each student three blank index cards. Ask them to choose three words that best describe Althea, and write one word on each card in pencil. Check for correct spellings. Give the children three more cards and repeat this process with three about me - words about themselves.
8. Next, have the students write over the word in crayon and draw shapes or designs on the card too. When the cards are completed, have the students paint over the words with watercolor. Let dry.
9. Staple the six cards together, three over three to form a square shape. Share and display in your area or send home.

To learn more about Althea Gibson: <http://www.altheagibson.com/biography>

No matter what accomplishments you make, somebody helped you.

~ Althea Gibson

ACTIVITY 28: WHERE I'M FROM

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To state that every community contains something of value</p> <p>To write a poem including images of community</p> <p>To foster positive peer relationships</p>	<p>Students use spoken, written, and visual language to accomplish their own purposes.</p> <p>Students participate as knowledgeable, reflective, creative and critical members of a literate community.</p>	<p>What did you learn about where you are from today?</p> <p>How did you share materials today?</p>	<p>To listen, attend and participate with a partner and individually</p>
<p>MATERIALS/TIME</p> <p>Chart paper, pencils, markers, crayons, post-it notes, artifact from your home or neighborhood – can be a menu, newspaper, photograph, music, Writing connection: poem Where I'm From by George Ella Lyon, sample poems</p> <p>45 MINUTES</p>			

SERVE

1. Share the artifact you brought in that tells something about you and the place you are from or thinking about. For example, you could bring in a tennis racquet and talk about the court where you go to play tennis and why it is important. Then say I am from long, warm afternoons, playing tennis with new friends.

RALLY

1. Read Where I'm From by George Ella Lyon, or if you have access to the internet hear the poet read her poem at: <http://www.georgeellalyon.com/where.html>
2. Explain how the poet uses a list of things or objects to tell about where and when she is from. Ask the students to close their eyes and picture where they are from. Keeping their eyes closed, ask them to look around what do they see, what do they hear?
3. Ask them, "Where are you from?" Encourage them to answer you by starting with "I am from..."
4. Encourage all answers. They could include: I am from tennis courts, I am from St. Martin's School, I am from hip-hop...
5. Give copies of sample poems to writers. Read sample poems aloud.

POINT

1. Explain that they will be writing their own poem, "Where I'm From." It is helpful to collect ideas first.
2. Given a sheet of paper each student will make lists. The first list is labeled people. Instruct each writer to make a list or sketch of people in their lives and their relationship to that person next to the name, and what is special or memorable about them. For example, Mr. Smith – grade 5 teacher, read to us every day. Give the group 2-3 minutes of silent writing time to create their list.

3. Generate other lists the same way. Depending on age and skill level, lists can include foods, sports and equipment, things people say, music, special places in the community. Encourage writers to include sensory details and descriptions. Not just candy, but fudge, or Smartees, or Snicker bars.
4. When lists are complete give each writer another sheet of paper so they can compose their poem, *Where I'm From*. Remind each writer that each line should start with *I'm from*.
5. Place a chair in the front of the room as the Author's Chair. Invite writers to share their poem. After they read the poem ask the listeners, "What did this writer do well? What did you hear that you liked?" Only positive comments are helpful.

Sample Poems

Where I'm From...

Sample poem by George Ella Lyon

I am from clothespins,
from Clorox and carbon-tetrachloride.
I am from the dirt under the back porch.
(Black, glistening,
it tasted like beets.)
I am from the forsythia bush
the Dutch elm
whose long-gone limbs I remember
as if they were my own.

I'm from fudge and eyeglasses,
from Imogene and Alafair.
I'm from the know-it-alls
and the pass-it-ons,
from Perk up! and Pipe down!
I'm from He restoreth my soul
with a cottonball lamb
and ten verses I can say myself.

I'm from Artemus and Billie's Branch,
fried corn and strong coffee.
From the finger my grandfather lost
to the auger,
the eye my father shut to keep his sight.

Under my bed was a dress box
spilling old pictures,
a sift of lost faces
to drift beneath my dreams.
I am from those moments--
snapped before I budded --
leaf-fall from the family tree.

ACTIVITY 28: WHERE I'M FROM

Name: _____

Where I'm From Gathering Sheet

Fill in as many boxes as you can. Please include details like sights, smells, sounds, size, color. When finished, share it with your partner.

Special Foods	Repeated sayings - Something adults always say to you.
Favorite places to be	Games you want to play every day
Major events - celebrations or tragedies	TV show you've watched more than 5 times
Favorite object (toys, article of clothing, book, jewelry,)	Hobbies/Interests
Any other ideas?	

ACTIVITY 29: CITY I LOVE—NEIGHBORHOOD MAPS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To create a map of their neighborhood and share it with a partner</p> <p>To listen as their partner shares and provide feedback</p> <p>To foster positive peer relationships</p>	<p>Students use spoken, written, and visual language to accomplish their own purposes.</p> <p>Students participate as knowledgeable, reflective, creative and critical members of a literate community.</p>	<p>What did you learn about neighborhoods today?</p> <p>How did you show your partner that you were listening today?</p>	<p>To listen, attend and participate with a partner and individually</p>

MATERIALS/TIME

Chart paper, large white construction paper, pencils, markers, crayons Book connection: City I Love written by Lee Bennett Hopkins or Sidewalk Chalk by Carole Boston Weatherford

45 MINUTES

SERVE

1. Explain that a community is a place where groups of people live, or all of the people living in the same place. It includes our neighborhood, the place where we live, work and grow up.
2. Ask, "What is in your community? How is your community special?" Have the students talk to their partners about what is in their neighborhood. Responses may include houses, streets, playground, school, church, stores.
3. After they have talked to their partner, ask if someone would share what is in their neighborhood or what their partner said was in their neighborhood. Ask them to share what is special about their neighborhood.
4. List responses on chart labeled Our Community and/or the name of your city, i.e. Trenton

RALLY

1. Read a few poems from City I Love. Ask, "What other places can we add to our community?"
2. Given paper and pencils ask children to write a list of people, places and things that they might see in their neighborhood.
3. When they have finished ask the children to share their list with a different partner
4. Ask, "What is one thing you heard about your partner's neighborhood?"

POINT

1. If possible, walk outside and notice details about your school/rec center community. What is the name of the street? How many buildings are on it? Is there a parking lot? Park? Playground?
2. Make a model of a neighborhood map. Explain that you will be making a map of your school, rec center, or neighborhood. Sketch streets and buildings on chart paper. Label the streets and name of buildings, etc. Or generate a map of the inside of your school showing hallways, principal's office, cafeteria, etc. This is not fine art, just a simple drawing will be less intimidating for map makers who are convinced that "I can't draw."
3. Give each student a large piece of paper. Tell them they will be making a map of their neighborhood or street. Ask them to sketch with pencil first and add as many details as they can.
4. Encourage them to label their house, neighbor's homes, names of streets, stores, etc.
5. Label points of interest like favorite places, dangerous places, places where important things happened like falling off a scooter, or a fair or party.
6. After maps are finished, have each student share their map with the group. Ask students to tell about one important thing that happened in their neighborhood.
7. If possible, display maps in your meeting area.

NEIGHBORHOOD MAP



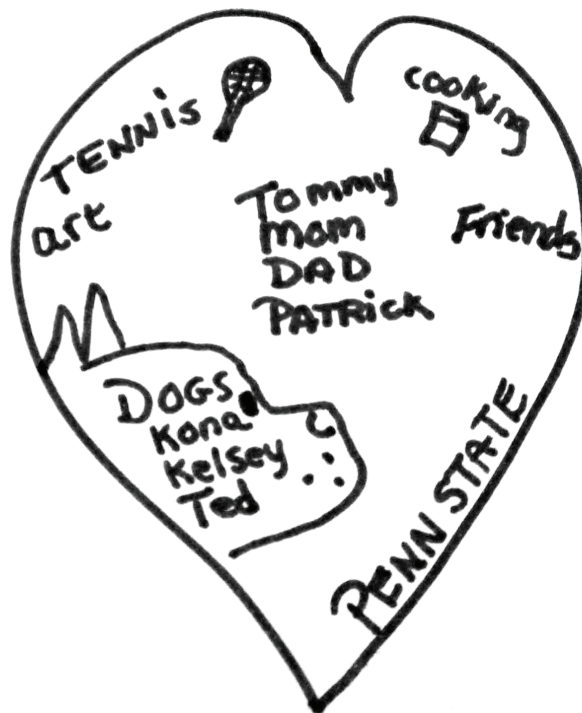
MORE FUN WITH MAPS

Places in our lives hold stories. Invite writers to use an X or a star to mark a spot on your map where something important happened. Spend time in your notebook writing down what happened there and tell the story to the paper. Some questions that may assist the writer in generating story details are: What happened? Who was with you? What time of day was it? What was to your left? Your right? How did it feel? What sounds did you hear?

Make a Heart Map

This idea comes from writer/teacher/poet Georgia Heard. Draw a large heart shape on your paper. Fill the map with what matters to you, what is most important in your heart. My heart map contains my family, pets, tennis, the house I grew up in, books, my first bike, teaching, chocolate, college, friends, cooking, etc. You can fill your heart map with words and pictures of whatever is most important in your life. You can include future dreams too. Heart maps are filled with stories, so be sure to share them and invite writers to write about what is in their heart.

Heart Map



"Start where you are. Use what you have. Do what you can."

—Arthur Ashe

ACTIVITY 30: SOMETHING BEAUTIFUL

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To state that every community contains something of value</p> <p>To identify what is valuable in their community</p> <p>To listen as their partner shares and provide feedback</p> <p>To foster positive peer relationships</p>	<p>Students use spoken, written, and visual language to accomplish their own purposes.</p> <p>Students participate as knowledgeable, reflective, creative and critical members of a literate community.</p>	<p>What did you learn about communities today?</p> <p>How did you show your partner that you were listening today?</p>	<p>To listen, attend and participate with a partner and individually</p>
<p>MATERIALS/TIME</p> <p>Chart paper, pencils, markers, crayons, post-it notes Book connection: Something Beautiful by Sharon Dennis Wyeth</p> <p>45 MINUTES</p>			

SERVE

1. Say to the students, "Think about all the places you have visited today. Turn to your partner talk about all the places you have been today."
2. When talking quiets, or after a few minutes, ask someone to share where they or their partner have been that day.
3. Children can write the names of places they have visited that day on post-its and place on a chart labeled Places in our Community.
4. Or leader can write a list of places they have been on a piece of chart paper labeled, Places in our Community. Answers could include: school classrooms, recess yards, homes, doctor's offices, stores, etc.

RALLY

1. Ask: "What is special about our community, either our school community or the street where we live?" Listen as the students share their responses. When one child finishes you might say "'Can someone add onto what he said?"
2. Direct the students to "Turn and talk to your partner about what is special about your community and try and tell why it is special. For example, if you have a tennis court in your community, it is special because you get to go there to play."
3. Again, ask for someone to share what is special and WHY it is special in their or their partner's community.

POINT

1. Show the cover of *Something Beautiful* and ask the students to predict what it will be about. After a few guesses, show the pictures silently and ask the question again
2. Make sure the students are sitting with a partner as you read the book aloud.
3. Stop reading on page 10 where the teacher has written the word *Beautiful* on the board. Ask, "What has the girl seen in her neighborhood so far? Turn and talk to your partner about what had happened in the story so far." After a few minutes, ask the students to share what they remembered about the story.
4. Continue reading until you reach the page about Mr. Sims. Repeat the question "What has the girl seen in her neighborhood now? What did she learn about her neighborhood? About herself?"
5. Turn and talk to your partner. After a few minutes, ask the students to specifically name something she saw in her neighborhood. Ask, "Do you have anything like that in your neighborhood?"
6. Continue reading to the end of the book; include the Author's Note. Ask, "What are some beautiful things in the story? How did the girl make her neighborhood more beautiful?"
7. Refer back to your *Places in our Community* chart made earlier. Ask, "Which places on our list would be *Something Beautiful*?"
8. Given a sheet of paper or in notebooks, ask the students to make a list or sketch of 5 beautiful things in their home or school community. Have them pick one that stands out to them.
9. Given a sheet of paper ask them to write about and illustrate *My Something Beautiful*. For example: It could be a simple sentence - *My Something Beautiful is* _____ *because* _____.
10. When everyone is finished, gather the students in a circle and have students share and display their art and writing with each other.

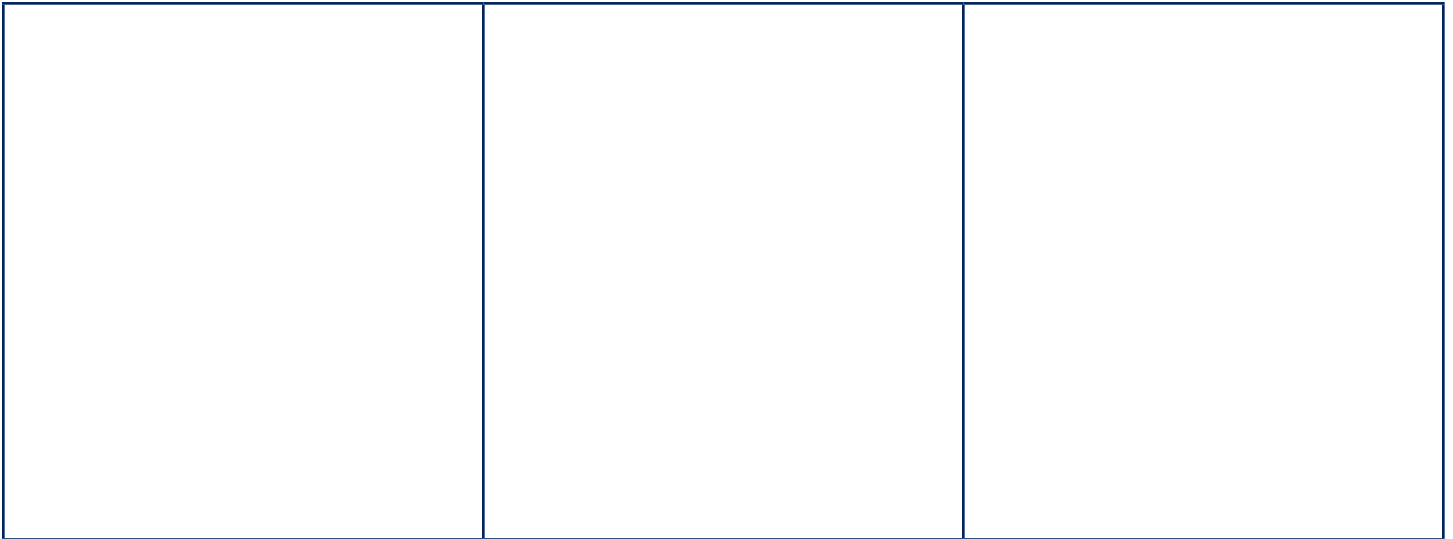
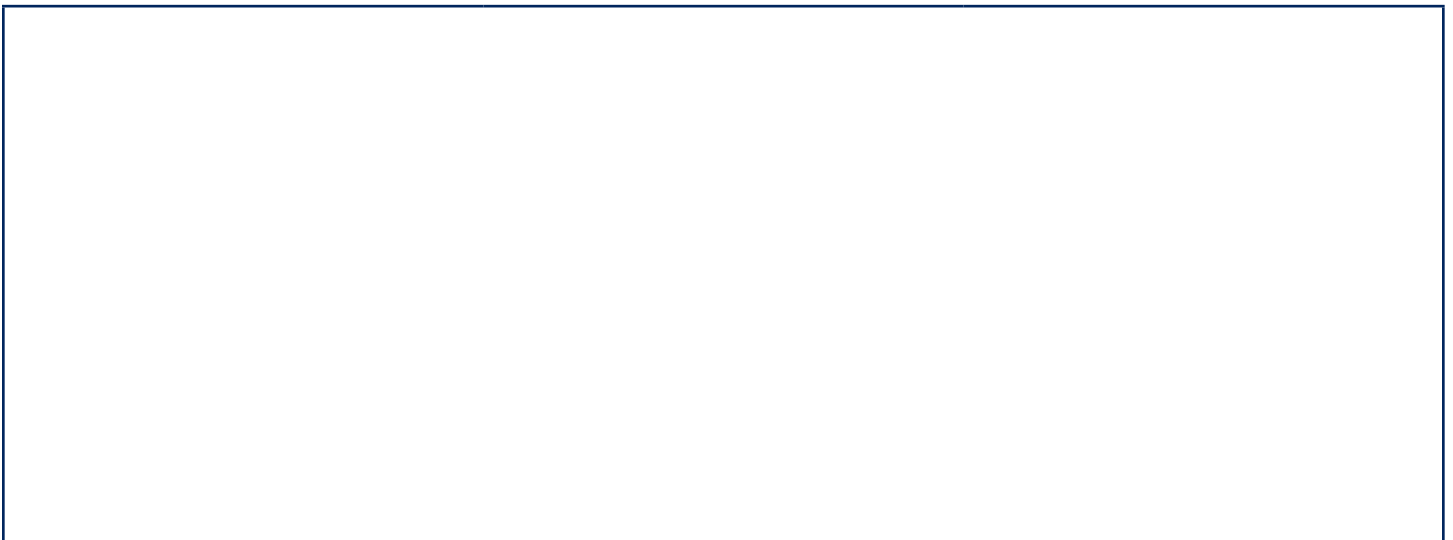
More Fun with Something Beautiful

Invite the students to **create a story strip** about something beautiful in their lives. There are stories or comic book layouts attached to this lesson that can be copied and given to the students to use. Or, they can create their own. Story strips are a fun and easy way to share ideas about many topics. Use them in any of the other lessons as well.

Another action could be to write an acrostic poem using the letters in their *beautiful thing*.

COMIC STRIP LAYOUTS

COMIC STRIP LAYOUTS



ACTIVITY 31: COMMUNITY BINGO

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To state that every community contains something of value</p> <p>To create a chart of specific components of their neighborhood or school community</p> <p>To foster positive peer relationships</p>	<p>Students use spoken, written, and visual language to accomplish their own purposes.</p> <p>Students participate as knowledgeable, reflective, creative and critical members of a literate community.</p>	<p>What did you learn about communities today?</p> <p>How did you share materials today?</p>	<p>To listen, attend and participate with a partner and individually</p>
<p>MATERIALS/TIME</p> <p>Chart paper, pencils, markers, crayons, post-it notes, Community Bingo blank grid (run off a few extra) Book connection: Something Beautiful by Sharon Dennis Wyeth</p> <p>45 MINUTES</p>			

SERVE

1. Remind the students of the book Something Beautiful. Re-read it, (takes about 5 minutes) or take a picture walk showing pictures and asking students what they remember about the page shown.
2. Ask them to name the something beautiful they have.

RALLY

1. Tell the students they will be learning more about what our communities hold for us.
2. Refer to neighborhood maps from lesson one. Ask the students to list three things that are in their neighborhood, beautiful or not.

POINT

1. Give each student a blank Community Bingo grid. Tell the group that they will be creating a community bingo. They are to write or draw something that is in their community in each box. Work as a whole group to generate a list and write list on chart or board.
2. Possibilities include, homes, park, school, churches, front steps, porches, window boxes, fire hydrants, parking meters, gardens, trees, alleys, backyards, stores, groceries, fire house, street light, barber shop, fruit stands, fences, flower boxes, etc.
3. After students have created their bingo card have them swap it with another teammate.
4. Ask the students to read the Community Bingo card to themselves.
5. Tell students to put their name on the middle square
6. Tell the students they will be walking around trying to find someone who fits the words on the square. Give an example.
7. When someone answers yes to the prompt on the square, that person writes his initials in the square and you move on trying to find someone else who can sign your card.
8. After you collect 5 signatures vertically, horizontally or diagonally, shout Bingo!
9. We have found that we usually play until the whole card is covered.

COMMUNITY BINGO

		Your Name Here		

Someone who has...

"Champions are people who want to leave their sport better off than when they started."

– Arthur Ashe

ACTIVITY 32: UPTOWN ART PROJECT

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To state that every community contains something of value</p> <p>To create a chart of specific components of their neighborhood or school community</p> <p>To foster positive peer relationships</p>	<p>Students use spoken, written, and visual language to accomplish their own purposes.</p> <p>Students participate as knowledgeable, reflective, creative and critical members of a literate community.</p>	<p>What did you learn about communities today?</p> <p>How did you share materials today?</p>	<p>To listen, attend and participate with a partner and individually</p>
<p>MATERIALS/TIME</p> <p>Chart paper, pencils, markers, crayons, post-it notes, Community Bingo blank grid (run off a few extra) Book connection: Something Beautiful by Sharon Dennis Wyeth</p> <p>45 MINUTES</p>			

SERVE

1. Remind the students that we have been learning about where we are from, about our communities.
2. Ask, what are the best parts of your communities?

RALLY

1. Ask the students to sit with a partner, as they will be continuing to talk about where they are from.
2. Show the book Uptown. Explain that it is a special book about a special place. The author/illustrator uses words, paint and collage to share his neighborhood with us.

POINT

1. Read Uptown aloud slowly, and share the illustrations for they tell the story too.
2. After reading the text, ask partners to choose a favorite page. Ask them to explain why it is their favorite. Point out that Bryan Collier tells us what he loves about Harlem and why he likes it.
3. Ask students to label a piece of paper with the name of their city or town. Tell them they will have a few minutes to begin writing sentences modeled after Bryan Collier. Using Uptown as a model, point out that the first sentence starts with Uptown is... and is written in colors. It is usually a fact like Uptown is a row of brownstones.
4. The follow up sentence describes the fact or tells the reader something more and is written in different color.
5. Uptown is...or in our case... Trenton is...
6. After everyone has completed a few sentence pairs, ask them to choose one to illustrate.
7. Their art work can be a collage or cityscape.

8. Cityscapes - have the students cut several rectangles and a variety of triangles. The rectangles will serve as buildings. They can be decorated with windows, doors, and brickwork. The triangles make interesting rooftops. Yellow squares can serve as windows. After the buildings are completed they may be glued onto another sheet of colored paper showing time of year or time of day.
9. Create a scene – Looking at Brian Collier’s Uptown, create a scene from their town or city. Sketch it out and use scrap papers to collage some or the entire scene. For example, tissue paper can be used for sky or grass, torn paper can make backgrounds, and wall paper can cover rectangles to form buildings.
10. Attach writing page to artwork or display together.
11. Author’s chair, have students share their art and writing with group in the author’s chair. Ask listeners to state what the artist/writer did well.
12. Display in area or send home to share with family.

Author’s Chair:

Any chair placed at the front of your space as the place that writers sit to share their work with the group. It is a special place reserved for this purpose.

A CITYSCAPE SAMPLE



CHAPTER 4: SUPPLEMENTAL MATH ACTIVITIES

ACTIVITY 33: GEOMETRIC ART PROJECT

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Students will have an opportunity to experiment with area and perimeter	Mathematics as: Problem Solving, Communication, and Reasoning	Did I give serious thought to the ten important things that I wanted to share on my picture?	Problem Solving and Critical thinking
Students will explore irregular shapes	Computation and Estimation		Regions on a tennis court
Students will have the opportunity to create 'a work of art'	Mathematical Connections		
	Geometry		
	Measurement		
MATERIALS/TIME			
Paper, markers, pens, pencils, glue sticks, colored pencils, court diagram without measurements			
45 MINUTES			

SERVE

1. Ask the students to find the perimeter and area of the diagram of the tennis court. Have them write down their measurements.
2. Ask the students to cut the "court" apart into its ten separate rectangles.

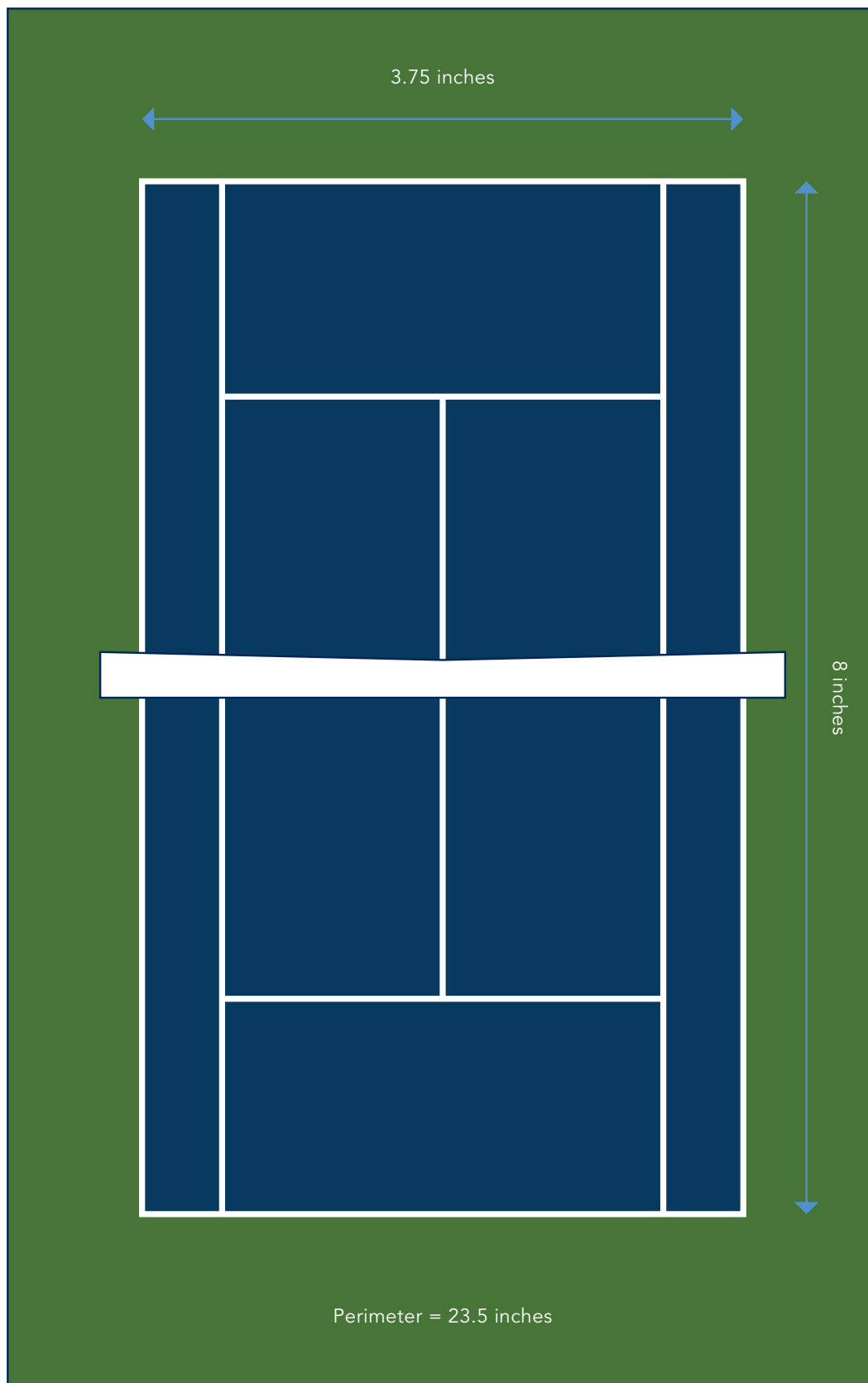
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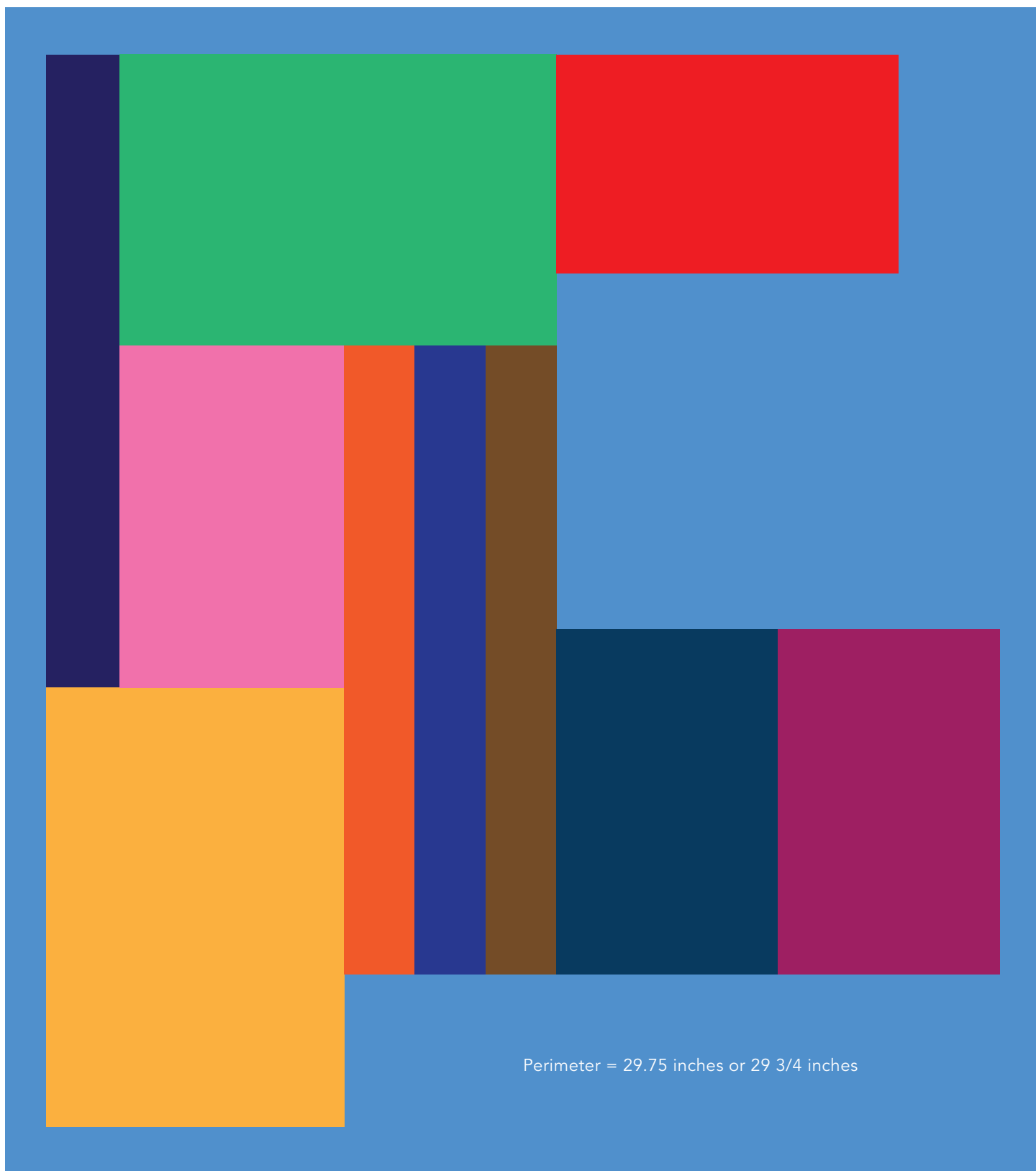
1. Students should now make a new diagram, picture, shape, etc. with their ten pieces.
2. Rectangles must share sides (not just corners).

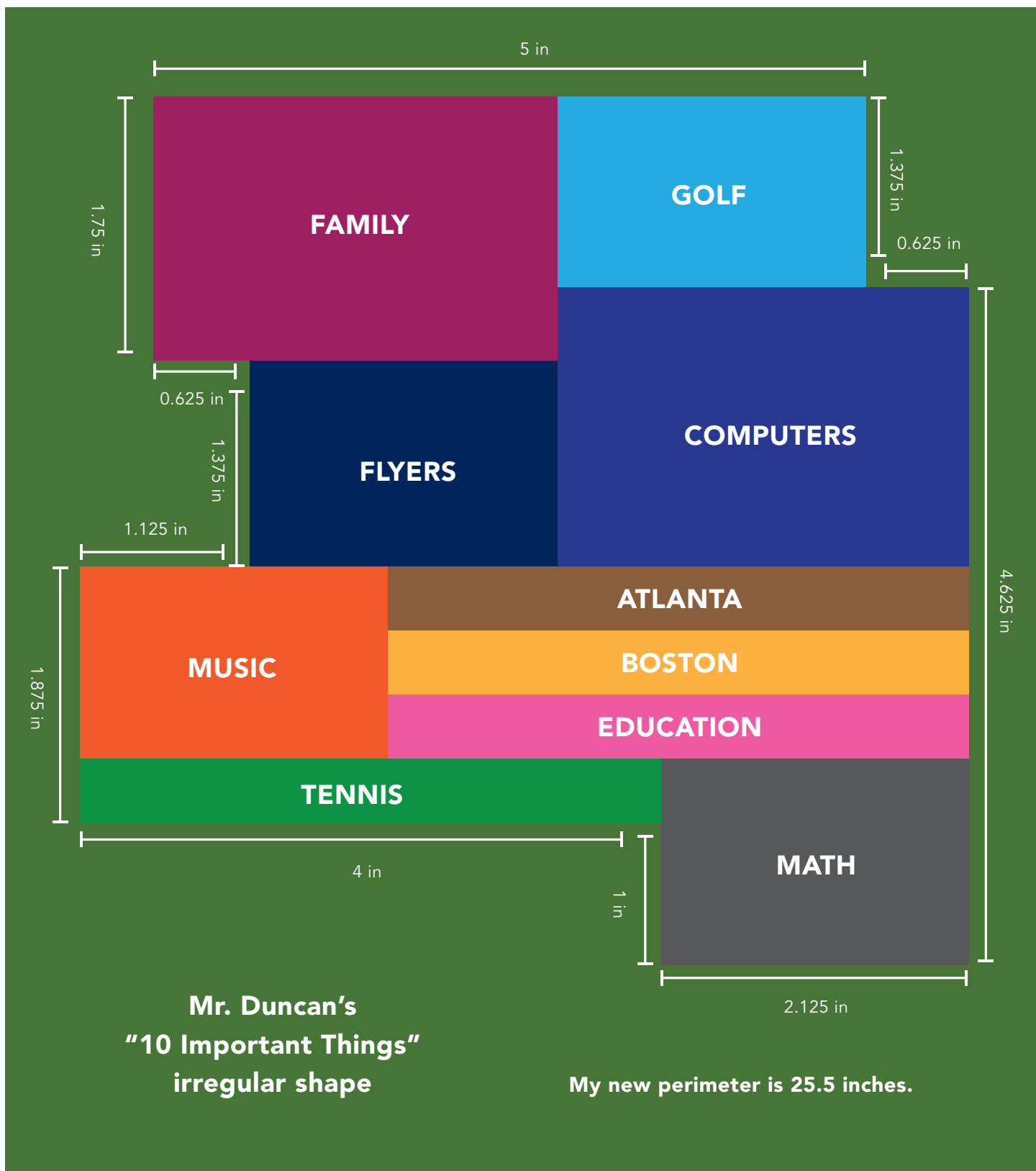
POINT

1. Students will discuss ways to find the perimeter and area of irregular shapes.
2. When students have finished the discussion, measure the new perimeter and find the new area.
3. When the calculations are complete, compare the new perimeters and areas with the originals.
4. When colored in* and looking good, place these works of art around the room for all to see.

***Alternate product: "Write ten things that are important to you, one in each rectangle." Your finished picture will be a "snapshot" of who you are as a person and a tennis player.**







ACTIVITY 34: TENNIS COURT SUDOKU

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Introduce the problem solving strategy: Guess-Check-Rethink	<p>Make sense of problems and persevere in solving them.</p> <p>Reason abstractly and quantitatively.</p> <p>Construct viable arguments and critique the reasoning of others.</p>	Why is it important to keep your previous attempts/work on the problem?	<p>Perseverance</p> <p>Practice</p> <p>Precision</p>
<p>MATERIALS/TIME</p> <p>pencil, paper, court diagrams, chart paper/whiteboard, markers</p> <p>45 MINUTES</p>			

GUESS-CHECK-RETHINK

SERVE

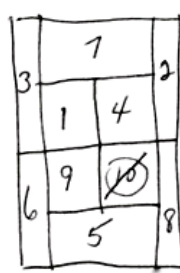
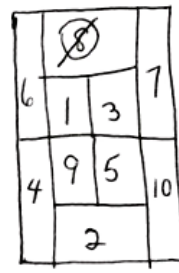
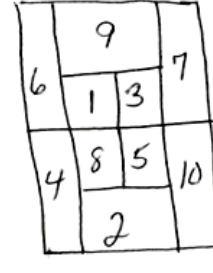
- Students will review the four-step problem solving method. Have them discuss the importance of each of the steps.
- Ask the students what they know about the strategy "Guess, Check, and Revise."
- Discuss with the students the importance of organizing their thinking on paper.
- Ask the group if anyone can define the word "consecutive." Discuss and define.

RALLY

- Ask the students to name the various parts of the tennis court. (left service box, right service box, back court, alley)
- Ask students, "How many regions are there on a doubles tennis court?" (10)
- Problem: Place the numbers 1 – 10 on the ten regions of the doubles tennis court so that no two consecutive numbers are touching, even at their corners.
- Remind students to keep track of their guesses so they can look back at what has been previously attempted.

POINT

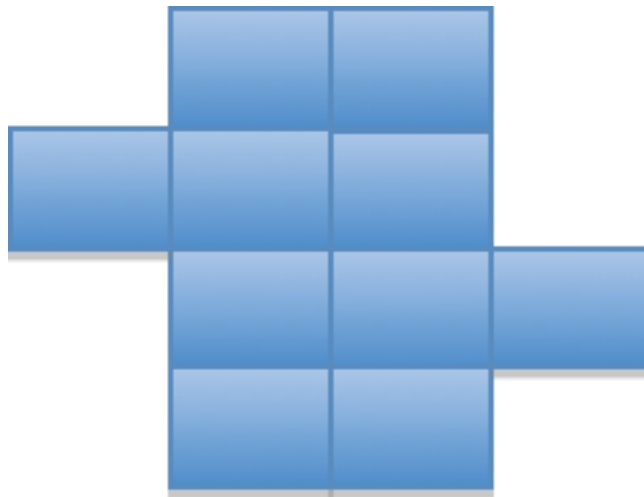
- Have the students share their solutions with the group. (There may be more than one solution)
- Ask the students: "How many attempts did you take before you found your solution? What did you learn from each of your guesses?"



ACTIVITY 34: TENNIS COURT SUDOKU

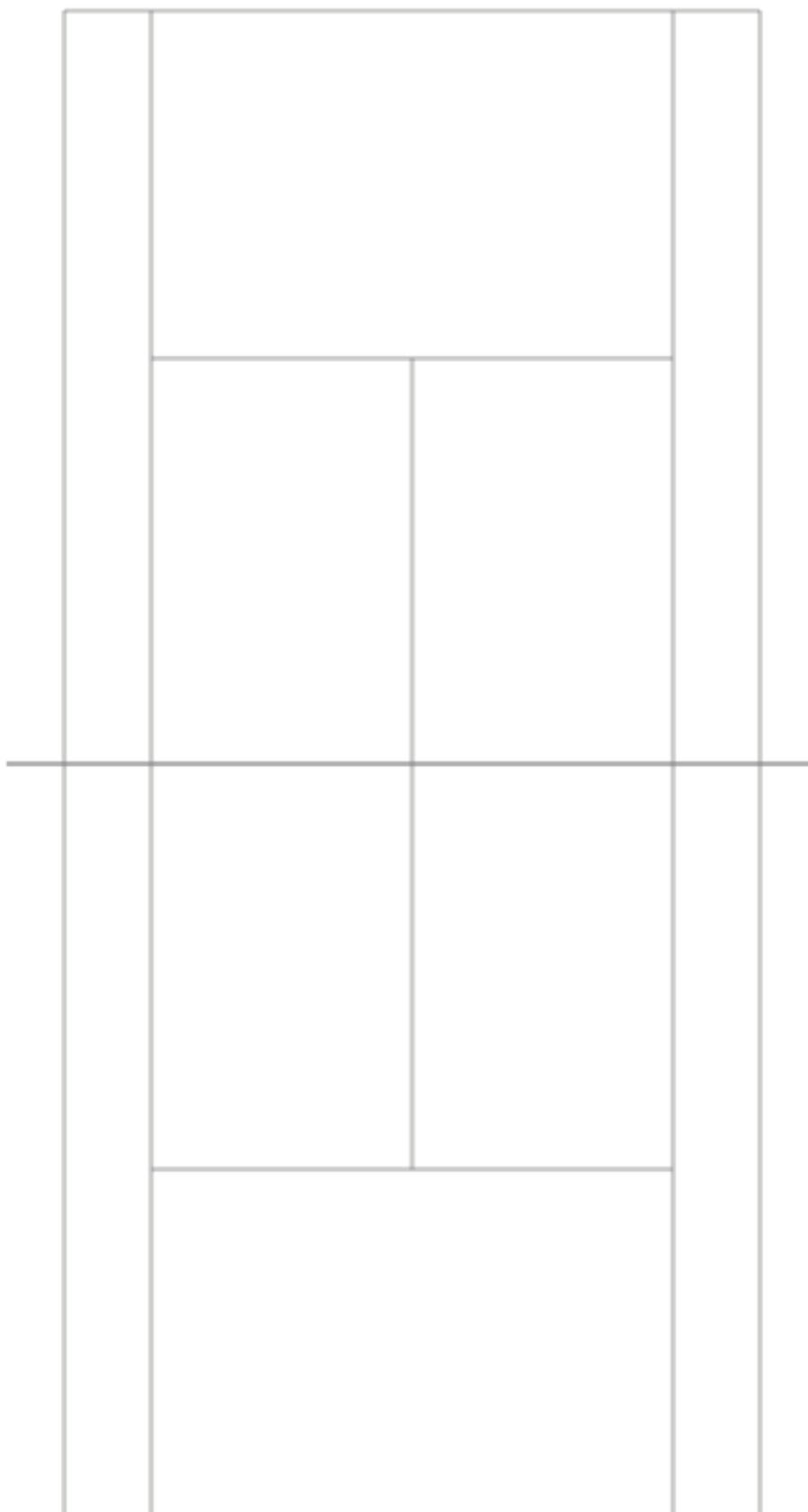
JUST FOR FUN

1. Can you place the numbers 1 – 6 on a singles tennis court so that no two consecutive numbers are touching, even at the corners?
2. Make up your own design with at least eight regions so that the numbers can be placed according to our rules.
 - a. Example: Place the numbers 1 – 10 on this design:



TENNIS COURT SUDOKU

Place the numbers 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 in each section of the tennis court.
No two consecutive numbers may touch, even at the corners.



CHAPTER 5: SUPPLEMENTAL NUTRITION ACTIVITIES

ACTIVITY 35: BLAST-OFF GAME

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To identify the five food groups and how many servings should be eaten daily	Students will demonstrate the ability to use decision making skills to enhance health.	How well did I play the games today? What strategies helped me on the Blast-Off game?	Good nutrition leads to healthier and stronger bodies, on and off the court. Teamwork
MATERIALS/TIME Computers and internet access to: www.choosemyplate.gov/children-over-five.html . Copies of Nutrition Information for Instructors. Blank food groups sheets for students 45 MINUTES			

SERVE

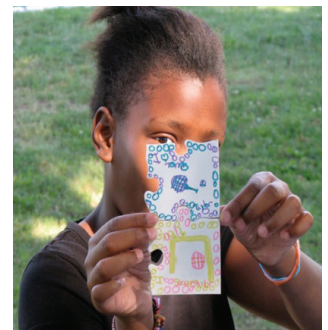
1. Explain that the U.S. Department of Agriculture is trying to improve the nutrition and well-being of Americans. Toward this goal, they have two primary objectives: Advance and promote dietary guidance for all Americans, and to conduct research and analyses in nutrition.

RALLY

1. Review the names of 5 food groups. See attached - Nutrition information for Instructors . Ask the students if they can name a food from each group.
2. Ask the students to divide into two teams. For each team, students need a sheet of paper divided and labeled into the 5 food groups. (see attached) Give each team 6 minutes to come up with as many foods and write them in the correct place on the food pyramid.
3. Share each team findings and score a point for a food placed in the correct column on the paper.

POINT

1. Direct each player to website www.choosemyplate.gov/children-over-five.
2. Tell them they will be playing the Blast -off game. They are to fuel their rockets with food and activity. Follow directions for the game and play!
3. After the game, discuss what helped them to win the game.



NUTRITION INFORMATION FOR LEADERS

~ FIVE FOOD GROUPS ~

GRAINS	VEGETABLES	FRUIT	MILK	MEAT/BEANS
Cereal	Zucchini	Apples	Yogurt	Fish
Breads	Carrots	Oranges	Milk	Turkey
Bagels	Peppers	Bananas	Cream	Chicken
Tortillas	Collard Greens	Peaches	Cheese	Beef
English Muffins	Spinach	Watermelons	Skim Milk	Eggs
Muffins	Potatoes	Pumpkins		Steaks
Crackers	Onions	Strawberries		Hamburgers
Pretzels	Lettuce	Grapes		Beans
Popcorn	Cucumbers	Plums		Limas, Kidneys, Black, Lentils
Oatmeal	Tomatoes			Peanut Butter
Pastas	Broccoli			Almonds
Rice	Squash			Sunflower Seeds
Pancakes				

Other Information:

- Call foods healthy or not so healthy
- Kids age 7-10 should eat: 5 grains-4 vegetables-3 fruit –3milk –2 meat and beans daily. It can read like an address 54332 (USDA)
- Kids aged 11-13 years old should eat 65332 daily (USDA)
- A serving is often a cup. A cup is about the size of a baseball.
- Calories:
 - We burn one calorie a minute watching TV.
 - We burn 8 calories per minute jumping rope.
 - A cup of skim milk is 80 calories.

FOOD GROUP GAME

Work with your team to write as many foods in the correct column as you can. Here's one to get you started: 'BREAD' goes in the Grain's column. Good luck and good eating!

GRAINS	VEGETABLES	FRUIT	MILK	MEAT/BEANS

NUTRITION WEBSITES

www.nutritionexplorations.org/kids/main.asp

Join Berry and the gang from The Pyramid Cafe to learn about building a healthy body. Features games, coloring pages, recipes, contest, and kid's panel.

www.nutritionforkids.com/

Innovative and fun activities, recipes and information for kids, parents and educators

www.nourishinteractive.com/

The fun way to learn about nutrition! Visit Nourish Interactive the child-safe, fun and FREE healthy family living and kids' nutrition education website.



ACTIVITY 36: MAKING DECISIONS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To make healthful decisions.	Students will demonstrate the ability to use decision-making skills to enhance health.	Do you like making decisions for yourself?	Learning to make decisions individually and acknowledge successes of other athletes.
To work as a team	Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.	Do you ever think about what will happen because of a decision you have made?	How do you decide what shot to make?
MATERIALS/TIME Strips of colored paper or sentence strips, markers, pencils, post-it notes, chart paper/board 45 MINUTES			

SERVE

1. Explain to the students that decisions are made every day. Point out that they are already decision makers.
2. Have the students take five minutes to think of all the decisions they have made so far today.
3. Pass out post-it notes and have the students jot down one decision that they have made today. For example: whether to get up, what time to get up, what to wear...
4. Have each student place his or her response (post-it) on the chart paper.

RALLY

1. Read post-its and point out that just as they made personal decisions for themselves, they are now going to make decisions for each other together as a class.
2. Display chart, Good Social Traits, to students and explain that they will decide as a class, on four traits that they and their peers will practice on the tennis court and in the classroom at all times.

POINT

1. Divide the class into four groups and have each group select one trait, a reporter, supplier, and one recorder.
2. The "supplier" will get the supplies for the group.
3. The "reporter" will report the group's decision with an explanation for their choice.
4. The "recorder" will write their trait of choice on a strip of paper.
5. Post it

Note: At the end of the lesson, share with the students, and post the five steps for decision making.

STEPS FOR DECISION MAKING

- 1. Identify the problem.**
- 2. Develop a plan.**
- 3. Look at options/alternatives — Pros/Cons**
- 4. Make a decision.**
- 5. Act on the decision.**

ACTIVITY 37: SOLVING CONFLICT FOR A HEALTHIER YOU

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To be able to arrive at peaceful, healthful solutions for conflict.	Students will demonstrate the ability to access valid information and products and services to enhance health. Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.	What did it feel like giving advice to someone else? How did you know what to say to them so that it might help them?	Conflicts between teammates and opponents can affect your game. Conflicts should be dealt with calmly and courteously.
MATERIALS/TIME Computers, notebooks, pencils, conflict scenarios 60-90 MINUTES			

SERVE

1. Listen to a 5-10 minute segment of a radio show.
2. Tell the students to pay attention to how the host responds to the callers questions.
3. Tell the students that they are going to pretend that they are the host of a radio talk show called, Conflict Calls!
4. Tell the students it is an hour-long radio show where kids call in with conflicts for the host to provide advice.

RALLY

1. Explain that the producers of the show will allow them time to prepare their responses.
2. Read the information gathered about the callers conflicts.
3. Select one of the callers to respond to.
4. Before you start writing, visit the website, www.kidshealth.org to read articles on kid's health to help you gather ideas and information about dealing with conflict.

POINT

1. Allow students time to explore the website and to read the articles.
2. Tell the students to write their detailed responses in their notebooks.

CONFLICT CALLS!

You're on the air...



Caller One: Roland

I'm dreading math class tomorrow. Tommy K. thinks it's his life's goal to pick on me because I occasionally give a wrong answer. Yesterday in class I was mortified when I got up to write my answer on the board and he tripped me and called me a "dumb klutz". My friends even laughed because they don't want him picking on them. I was so angry....

Caller Two: Johnny

....I mean maybe the pain will just go away. I've been taking over the counter pain medicine just so that I can make it through the day. It seems every time someone in my family goes to the doctor's office, they come back worse than they were when they went. I'm really feeling....

Caller Three: Amber

....so I said, "Who made you the Queen of the Nile?" My little sister thinks just because she's the "baby" that it's all about her. My parents feed into everything she does and blames me whenever she cries and doesn't get her way. If she even looks my way I go in the opposite direction. I can't stand being around her anymore, she's always in my face....

Caller Four: Octavia

....Is the man crazy or what? Who gives four hours of homework? I don't even get the chance to spend time with my friends anymore because I'm stuck at the kitchen table solving problems for hours. Isn't it against the law? One time he even...

ACTIVITY 38: A BOX OF COMPLIMENTS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To build a climate of respect and positive interactions on and off the tennis court	Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.	Did you give a compliment today? What was the circumstance? Did you receive a compliment today? How did it make you feel?	Sportsmanship is an important part of OUR game. Competition should include positive dialogue between competitors.
MATERIALS/TIME A box pre-decorated and labeled "Compliment Box," markers, index cards, pencils, Chart paper/board, notebook 45 MINUTES			

SERVE

1. Remind the children about the good social traits discussed in Activity 17 and hold up the box titled, "Compliment Box."
2. Explain that "we" as a class, in the classroom and on the tennis court, will recognize students that demonstrate the traits posted with written and verbal praise.

RALLY

1. Model for the students how the teacher, the tennis coach, or their peers can give a compliment of praise. For example:

In the classroom—take an index card beside the Compliment Box and write, "James showed good manners when he held the door for the girls as they entered the room."

On the court—take an index card and write, "Lizette used praise instead of put downs when she said good try as I missed the tennis ball."

1. Fold the index cards once and place them in the Compliment Box.
2. Explain that at the end of the week the teacher will have a "Day of Celebration" to recognize the students whose names and written traits were on the index cards in the box (May provide praised students with a treat).

POINT

1. Have the students practice by having each student, one at a time, come up to the Compliment Box to take an index card to write a line of praise (based on a posted trait) that a classmate demonstrated that day on the court or in the classroom.

ACTIVITY 39: NUTRITION WALL HANGING

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To create a visual representation, a graph and wall hanging, of the food pyramid and daily suggested servings of each food group	Students use spoken, written, and visual language to accomplish their own purposes Students participate as knowledgeable, reflective, creative and critical members of a literate community	What did you learn about where you are foods today? How did you share materials today?	To listen, attend and participate with a partner and individually
MATERIALS/TIME Nutrition info for instructors, multi-colored same sized, beads, string or yarn, two sticks or dowel rods per student, graph paper, colored pencils 45 MINUTES			

SERVE

1. Remind the students of the five food groups and Ask, what are some foods that are grains? What are some foods that are in the milk group?
2. Say, "Now that we know what to eat, how much should we be eating?"
3. Invite the students to guess how much we should be eating in several groups.

RALLY

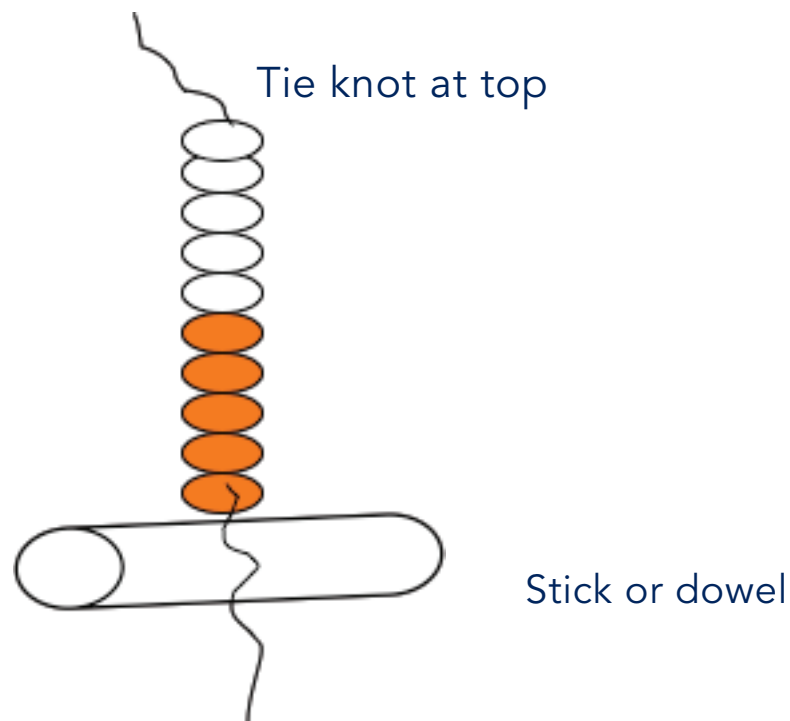
1. Write on the board, or on a chart, that 7-10 year old kids should eat: 5 servings of grains - 4 Vegetables - 3 - Fruit - 3 Milk - 2 meat and beans daily and need 60 minutes of exercise daily. A serving is about a cup; a cup is about the size of a baseball. It may be helpful to bring in a measuring cup to demonstrate.
2. Kids aged 11-13 years should eat: 6 grains, 5 vegetables, 3 fruit, 3 milk, and 2 meat and beans and get 60 minutes a day of exercise.

POINT

1. Give each student a piece of graph paper. Tell them to mark off a section that is 10 squares high and 8 squares wide. Have them draw a line separating each vertical column of 10 squares.
2. The first 5 columns represent the food groups. Each group will be a different color. Often you will see posters of the food pyramid with the following colors. Orange – grains, green – vegetable, red –fruits, blue – milk or dairy, purple for meat/beans.
3. Depending on their age, have the students color one block for the number of portions. For example, a 10 year old should color in 5 blocks orange for 5 servings of grains. Then, have them use a background color to color all the columns up to 10 squares. So, column one would have five orange squares and 5 white squares.

4. Column 6, can represent the number of minutes that kids should exercise each day. These 60 minutes can be any color you choose. One block represents 10 minutes so 6 blocks may be colored in, and 4 with a background color.
5. Column 7&8 are free choice. Colors may be chosen to represent the student in any way – favorite colors, age, address, anything that represents them, but cannot exceed 10 squares.
6. Cut 8 lengths of yarn or string. Tie one end of each string tightly around dowel or stick. Make sure to leave enough room between strings for the beads to fit in a row. The length of the stick should be a few inches longer on both ends.
7. Have the students use their graph of the food pyramid as a plan for their beads. String one row at a time. When you finish a row of 10 beads tie a knot at the end.
8. After completing all eight, tie each string to the other stick. You can tie another string to the top stick to use as a hanger.

For example, to get started:
Grains = 5 orange beads + 5 background beads



ACTIVITY 40: NUTRITION/SPARKLE SPELLING GAME

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To demonstrate knowledge of 5 food groups and name an example of each	Students will demonstrate the ability to use decision making skills to enhance health.	Students will demonstrate the ability to use decision making skills to enhance health.	Explore the importance of nutrition and performance.
To foster positive peer relationships			

MATERIALS/TIME
 Chart paper with 6 labeled columns, post-it notes, food groups handout, markers, notebooks, pencils, directions for Sparkle game
45 MINUTES

PREP: Prepare a large sheet of chart paper with five columns. Label the columns with the names of the food groups – Grains, Vegetables, Fruits, Milk, Meat and Beans.

SERVE

1. Find a partner to work with (some students may need help to find a partner). Ask, “What are some of your favorite foods?” Turn and talk to your partner about five of your favorite things to eat.

RALLY

1. When the talking quiets, give an all-quiet signal and ask the question again. Point out the five food groups on the chart. Give the students a few examples from each food group. (Fruits include oranges, apples, grapes, can you name some more?) As the students name their favorites, write them on the chart in the appropriate column.

POINT

1. Give each child five post-it notes. Instruct them to write the name of a food on each one. After they have completed all five, invite them to come up and add them to the chart.
2. Have a few additional post-its filled out with foods the students have not thought about. Ask them to add your post-its to the chart.
3. Ask the students, “What do you notice? Is there a food on the chart that you would like to try? If so, why is that?”
4. Have students stand up and get in a circle. Play a few rounds of Sparkle using the five food groups as the words to spell. If you have only a few students, don’t have them sit down at step nine of the Sparkle directions; keep the students in the game until the last round.

ACTIVITY 40: SPARKLE SPELLING GAME

OVERVIEW:

Student will play a game that challenges their spelling skills.

OBJECTIVES:

The students will:

Practice their spelling vocabulary.

Develop a positive attitude towards learning.

Practice their listening skills.



RESOURCES/MATERIALS:

A list of words

Area large enough for the whole class to stand in a circle

ACTIVITIES AND PROCEDURES:

1. Have the class form a large circle in an open area. Ask them to stay standing.
2. Tell the students that you are going to give them a spelling word and that it is very important for them to pay attention.
3. Say a spelling word, e.g., "tennis."
4. The first person will say the word "tennis."
5. The next student will say the first letter of the word, "t." If a student misspells the word, they have to sit down.
6. Have students go around the circle, spelling out the word "tennis."
7. Once all of the letters have been correctly spelled out, the next student says the whole word.
8. The next person in the circle says "sparkle" and the person after them sits down.
9. Start the game over when there is one student left standing.

Warning!!! This game can become very popular!!

ACTIVITY 41: FOOD COLLAGE

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To demonstrate knowledge of 5 food groups and name an example of each	Students will demonstrate the ability to use decision making skills to enhance health.	What did you learn about nutrition today?	Working together to explore making healthy choices
To foster positive peer relationships		How did others respect you today?	
		Have you thought of a new food to try?	
MATERIALS/TIME 5 large sheets of paper, markers, food ads from newspapers, handout of lists of foods in five food groups (see Activity 9) 45 MINUTES			

PREP: Collect food ads from newspapers or magazines. Have quite a lot so that many students can use them.

SERVE

1. Remind the students of the five food groups. Show poster listing some choices.

RALLY

1. Divide the students into partners or teams.
2. Assign or ask for volunteers to research one food group. You will have 5 teams or pairs working together.
3. Give each team a large sheet of paper. Ask them to label it with one of the food groups
– For example : Grains

POINT

1. Explain that they will be working together to find as many examples of foods in their food groups as they can.
2. They may use the ads, magazines, or write and draw the names or pictures of foods.
3. If they find something that another team could use, encourage them to pass it to who can use it.
4. Have each team share their posters and hang in area.

ACTIVITY 42: SNACK VOTE

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To demonstrate knowledge of 5 food groups and create a bar graph	Students will demonstrate the ability to use decision making skills to enhance health.	What did you learn about nutrition today?	Working together to explore making healthy choices
To foster positive peer relationships		How did others respect you today?	
To plan healthy snacks using the 5 food groups		Have you thought of a new food to try?	
MATERIALS/TIME			
5 large sheets of paper, markers, food ads from newspapers, handout of lists of foods in five food groups (see Activity 9)			
45 MINUTES			

PREP: Set up 5 voting stations – 5 tables or desks will work. Run off snack ballots.

SERVE

1. Remind the students of the five food groups. Show poster listing some choices. Ask if they know of some more items that could be added.

RALLY

1. Explain that today they will be creating a bar graph of favorite healthier snacks.
2. Each table is a voting station for one of the food groups.
3. On each table they will find a ballot that asks them to make a snack choice.
4. Show a ballot and demonstrate how to color it to vote for your choices.

POINT

1. Send pairs of students to each of the food group voting stations.
2. Ask them to make a display for that food group which includes some words and drawings for that food group. They can make a poster or tent a piece of paper.
3. After each station has a display, send the students to various stations so that not everyone votes at the same place at once.
4. They will color a block to vote and then move to the next station to vote.
5. Tally the votes and discuss favorites.
6. Ask if there is a new snack someone would want to try.

FAVORITE SNACKS

MEAT AND BEANS

Peanuts	Peanut Butter	Eggs	Meats	Almonds

FAVORITE SNACKS

DAIRY

Milk	Yogurt	Cheese

FAVORITE SNACKS

FRUIT

Apples	Oranges	Strawberries	Bananas	Grapes

FAVORITE SNACKS

GRAINS

Bread with Peanut Butter	Cereal	Popcorn	Tortillas	Oatmeal Cookie

FAVORITE SNACKS

VEGETABLES

Carrots	Tomatoes	Celery	Peppers	Cucumbers

ACTIVITY 43: NUTRITION RELAY

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To distinguish the difference between the five food groups	Students will demonstrate the ability to use decision making skills to enhance health.	What did you learn about nutrition today? How did others respect you today? Have you thought of a new food to try?	Teamwork
MATERIALS/TIME Sponge or tennis balls, markers, containers 45 MINUTES			

PREP: Using two different colored markers, (one color for team A and one color for team B) write the names of different food words on sponge balls. For example, the word bread should be written on two balls one for team A in red and the other in black for team B. Food words may include: tortillas, bagels, carrots, collard greens, apples, peaches, yogurt, milk, fish, almonds.

SERVE

1. Review the 5 food groups. Have students name various foods and name the food group to which they belong.
2. Today we are going to play a game involving the food groups. Show the students a “sponge” tennis ball (10 and Under tennis ball) and explain that they will be running a relay. Teams will be throwing “foods” in the proper food group containers.

RALLY

1. The teacher will label 5 containers (wastebaskets, buckets, etc.) each with one of the food groups.
2. Divide the group into two teams. Each team will line up in single file.
3. Place each set of sponge balls into two different bags, one for each team.

POINT

1. When the teacher says, “Go,” the first person in each line picks a ball from their team’s bag.
2. They read the word on the sponge ball and toss it into the proper food group container. For example, the word bread would be tossed into the container labeled grain.
3. Once the first person is finished, play continues until both teams sort all the words.
4. Teams score two points for each properly placed food.

EXTENSION ACTIVITY

1. Working with the tennis coach, move this game to the tennis court.
2. Identify the left service court as “Yes” and the right service court as “No.”
3. Each team is on the opposite side of the net in two lines. The coach calls out a food and a food group. If it is a correct match, like bread-grain, students hit a tennis ball into the “yes” section of the court. If it is not a match, students hit a ball into the “no” section of the court. Each player can score 2 pts. each time = 1 pt. for a correct answer and 1 pt. for hitting the target zone.
4. **OPTIONAL:** To support quick movement/decision-making, have the coach call out the food and food group as he/she is feeding the tennis ball. The player has to think fast as the ball is arriving.

ACTIVITY 44: HEALTHY MEAL PLANNING

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To demonstrate knowledge of 5 food groups and name an example of each To foster positive peer relationships To plan a healthy meal using the 5 food groups	Students will demonstrate the ability to use decision making skills to enhance health.	What did you learn about nutrition today? How did others respect you today? Have you thought of a new food to try?	Working together to explore making healthy choices
MATERIALS/TIME 3 paper plates per child, charts made in lesson 2 or a list of foods in 5 food groups. 45 MINUTES			

SERVE

1. Remind the students of the five food groups. Show poster listing some choices. Ask if they know of some more items that could be added.

RALLY

1. Give each child 3 paper plates.
2. Have them divide the plate into 5 sections
3. Ask them to label each section with the names of the food groups.
4. In the center of each plate, write the name of a mealtime - breakfast, lunch or dinner.
5. OR divide the group into three teams –Breakfast team, lunch team or Dinner team

POINT

1. Given what they know about healthy choices, ask children to plan a healthy breakfast, lunch and dinner.
2. In each section they can write or draw what they would like to have. For example in the grains section for breakfast, they may write oatmeal and draw a steaming bowl. A glass of milk can go in the milk section, etc.
3. At the end of their meal planning, ask the students to add up the number of items in each food group.
4. Ask how many grains in their day? How many veggies? How many milk?
5. Explain that ideally, it is suggested that kids in ages 7-10 eat: 5 grains, 4 vegetables, 3 fruits, 3 milk and 2 from meat and beans.
6. What do they think they would like to add? Delete?

CHAPTER 6: SUPPLEMENTAL PROBLEM SOLVING ACTIVITIES

ACTIVITY 45: OUR CHILDREN CAN SOAR—TEAMBUILDING

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To demonstrate understanding that someone in our community or family helped us become who we are.</p> <p>To create a puzzle piece identifying a significant helper and how they affected us.</p>	<p>Students employ a wide range of strategies as they write and use different writing process elements appropriately to communicate with different audiences for a variety of purposes.</p> <p>Students apply a wide range of strategies to comprehend, interpret, evaluate and appreciate text.</p>	<p>What did you learn about someone else today?</p> <p>What did someone learn about you?</p>	<p>Learning to make decisions individually and acknowledge successes of other athletes.</p>
<p>MATERIALS/TIME</p> <p>Notebooks, pencils, colored pencils, crayons, small puzzle pieces, ruler, 2 shoeboxes or books of equal size, tennis ball. Mentor Text: Our Children Can Soar by Michelle Cook</p> <p>45-60 MINUTES</p>			

SERVE

1. Today I will be sharing a very special book called Our Children Can Soar. Show the cover and read the back jacket where it explains the illustrators

RALLY

1. Place a shoebox on a table. Put a tennis ball next to it and ask, "How can I elevate the tennis ball?"
2. Say, "If I put the ball on top of one box, how high is it now?" Have children come to table and measure the distance. Stack another box on top of the shoebox and put the tennis ball on top of two boxes. Ask, "How high is it now? "How did we raise or elevate the tennis ball?" Answers include by putting it on the box, it was higher than when it was alone.

POINT

1. Read the book aloud, making sure to read slowly and share the pictures.
2. After reading, ask, "What pattern did you notice in this book?" You may need to read it again, to emphasize the pattern. The idea is that we are lifted up or made stronger by the achievements of those who went before us.
3. Explain to children that Arthur Ashe is one of those people. Have students complete the sentences by adding statements about themselves.

4. State, Arthur served, so I can _____.
5. Arthur won at Wimbledon so I can _____
6. Arthur co-founded the National Junior Tennis League (now known as the National Junior Tennis & Learning), so I can _____.
7. Arthur wrote books so I can _____.
8. Ask them who has helped them along their way. Tell them to name names. You may want to tell about someone who helped you. It could be a parent, teacher, minister, rabbi, coach, friend, aunt, uncle, grandmother, etc. Ask the students to write two or three statements about themselves. Ask them to try to follow the pattern. However, since most of our helpers are not famous, they need to say a little more about them For example, "My grandmother drove me to practice, so I could play tennis." Or, to follow the pattern, more closely, Grandmother drove so I could volley.
9. Trace the puzzle piece onto a sheet of paper. Plan your statement and illustration on the paper before you write it on the puzzle piece.
10. After this is written clearly and says what the student wants it to say, have them copy it onto a puzzle piece. Encourage artwork - make colored pencils, crayons and markers available.
11. Share each piece and have the children connect the pieces to demonstrate our connections to each other.

*"No matter what
accomplishments you make,
somebody helped you."*
Althea Gibson



ACTIVITY 46: DRAW A PICTURE OR DIAGRAM

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Introduce the problem solving strategy: Draw a Picture or Diagram	<p>Make sense of problems and persevere in solving them.</p> <p>Reason abstractly and quantitatively.</p> <p>Construct viable arguments and critique the reasoning of others.</p> <p>Model with mathematics.</p> <p>Use appropriate tools strategically.</p> <p>Attend to precision.</p> <p>Look for and make use of structure.</p>	How does drawing a picture help me solve problems?	<p>Perseverance</p> <p>Practice</p> <p>Precision</p>
<p>MATERIALS/TIME</p> <p>Pencil, Paper, Chart Paper/Whiteboard, Markers</p> <p>45 MINUTES</p>			

SERVE

1. Ask the students how pictures are used in printed directions. Have you ever worked with LEGOS, K'nex, or Erector Sets? Have you ever helped mom or dad put a piece of furniture together?
2. Do you think pictures are better than words for directions?

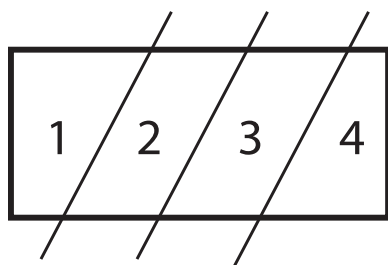
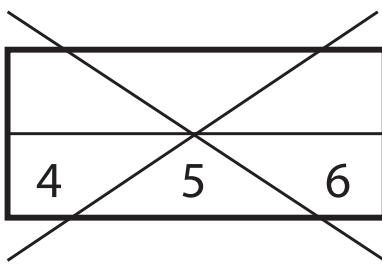
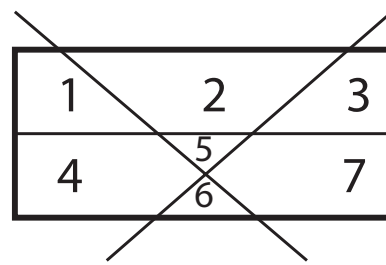
RALLY

1. Present the students with the following problem (Draw-A-Picture):
A tennis court is a giant rectangle. What is the most 'pieces of a court' you can get when you draw three straight lines that cross the court in any direction? (T)(7)
2. Present the students with the following problem (Diagram):
Our local NJTL will be having a single elimination tennis tournament next month. Single elimination means that when you lose, you are out of the tournament. In the doubles tournament, eight (8) teams will be invited to play. How many matches will the eventual champions have played to win it all? (P)(3)
3. Have students come to the board and/or share their drawing with the group, explaining why they believe their answer is correct.
4. Stress with the students the importance of their thinking and not necessarily the correctness of their answer.
5. Students must be supportive of each other when sharing their work.

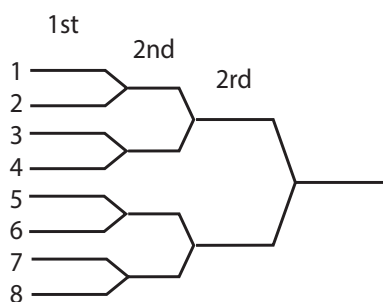
POINT

1. A shape of a tennis court is a giant rectangle. What is the most 'pieces of a court' you can get when you draw 4 straight lines that cross the rectangle in any direction? (T)(11) How about 5 straight lines? (P)(16)
2. In the tournament mentioned above, there will be a total of 32 players participating in the singles draw. How many matches will the eventual champion have played before they receive their trophy? (P)(5)

Draw-A-Picture



Diagram



ACTIVITY 47: USE AN ORGANIZED LIST

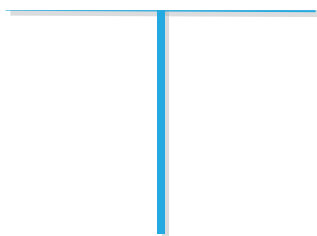
OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Introduce the problem solving strategy: Organized List	Make sense of problems and persevere in solving them. Construct viable arguments and critique the reasoning of others. Use appropriate tools strategically. Look for and make use of structure.	Why is it important to keep your work organized?	Perseverance Practice Precision
MATERIALS/TIME Pencil, Paper, Court Diagrams, Chart Paper/Whiteboard, Markers 45 MINUTES			

SERVE

1. Students will review the four-step problem solving method. Ask, "Why are these steps important?"
2. Ask the students what they think or know about the strategy, Use an Organized List.
3. Discuss with the students the importance of organizing their thinking on paper.

RALLY

1. Present the students with the following problem (Use an Organized List):
Coach Glen thought we needed a little 'target practice' today on the tennis court. We were each going to get three shots. Coach drew a big number in each of the service boxes and on the backcourt. The other side of the net looked like this:



How many different sums could the team members get if all three of their shots hit the target? (P)(10)

2. Ask the students, "What is lowest total of points you could get?" (9) "How do you know that is the lowest?"

- Ask the students, "What is the highest total of points you could get?" (27) "How do you know that is the highest?"

Make-A-Table

DOGS	PEOPLE

DOGS (4)	PEOPLE (2)	TOTAL FEET	
15 (60)	10 (20)	80	NO
14 (56)	11 (22)	78	NO
10 (40)	15 (30)	70	NO
9 (36)	16 (32)	68	NO
7 (28)	18 (64)	64	YES!

**25 heads
64 feet**

POINT

- Ask, "How did you organize your list?" "Did everyone organize their list the same way?"
- Ask, "Why did you decide to organize your list that particular way?"
- Coach isn't pleased with our shot selection so he decides we need to each take three shots at a new target. This time the point values are 3, 5, and 7. How many different point totals could we get if everyone hits the target with all three shots? (S)(7)
- Ask, "Why is there a different number of point totals for the second target?"
(Ex. response: "Because 7-7-3 has the same total as 7-5-5.")

JUST FOR FUN

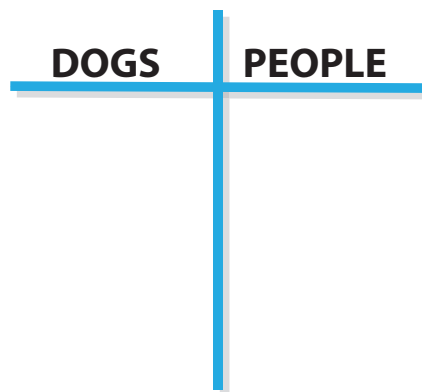
- If the students seem interested, ask them to try and find three different numbers that would give you more than 10 unique sums. (P) (None...that is the maximum number of combinations)
- Ask them to try and find three different numbers that would give you less than 7 unique sums. (P) (None...at least none have been discovered!)

ACTIVITY 48: MAKE-A-TABLE

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To introduce the problem solving strategy: Make-A-Table	<p>Make sense of problems and persevere in solving them.</p> <p>Construct viable arguments and critique the reasoning of others.</p> <p>Use appropriate tools strategically.</p> <p>Look for and make use of structure.</p>	How does putting our work in table format help you solve the problem?	<p>Perseverance</p> <p>Practice</p> <p>Precision</p>
MATERIALS/TIME Pencil, Paper, Court Diagrams, Chart Paper/Whiteboard, Markers 45 MINUTES			

SERVE

1. Ask the students, "What do you think 'make-a-table' means in problem solving?"
2. Ask, "How do you think a table or chart could help you solve a problem?" (This strategy helps the student see relationships between the numbers as well as patterns that may develop between the numbers.)
3. A table could be something as simple as a "T" chart.



RALLY

1. Here is a problem that could be solved using today's strategy: Last week our tennis coach had the craziest idea. "Tomorrow will be bring your dog to practice day!" Once we stopped laughing, we realized he was serious! What a great day we had! I looked around and counted 25 heads and 64 feet on the court. That should be just enough information for you to figure out how many players and how many dogs were on the court that day.
2. Please share your answer? (P) (7 dogs / 18 players)

Make-A-Table

DOGS (4)	PEOPLE (2)	TOTAL FEET	
15 (60)	10 (20)	80	NO
14 (56)	11 (22)	78	NO
10 (40)	15 (30)	70	NO
9 (36)	16 (32)	68	NO
7 (28)	18 (64)	64	YES!

**25 heads
64 feet**

POINT

1. Ask, "What did your table or chart look like? Why did you organize it that way? How did it help you arrive at your solution?"
2. Ask, "Did you use Guess-Check-Rethink while using this strategy?"
3. Have students share their work with another student or the class.
4. Here's a good follow-up problem: Coach asked us to have a seat off court to discuss our upcoming match. Some of us got to sit on those canvas folding chairs (4 legs) and the rest of us had to sit on those crazy camping stools (3 legs). When I counted the players, I got 13. When I counted the legs on their chairs and stools I got 48.
5. How many chairs and how many stools were there? (S)(4 stools / 9 chairs)

ACTIVITY 49: ACTING OUT THE PROBLEM

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To introduce the problem solving strategy: Acting Out the Problem	<p>Students make sense of problems and persevere in solving them.</p> <p>Students construct viable arguments and critique the reasoning of others.</p> <p>Students use appropriate tools strategically.</p> <p>Students look for and make use of structure.</p>	When might this strategy not be an appropriate strategy to be used??	<p>Perseverance</p> <p>Practice</p> <p>Precision</p>
MATERIALS/TIME Pencil, paper, chart paper/whiteboard, markers 45 MINUTES			

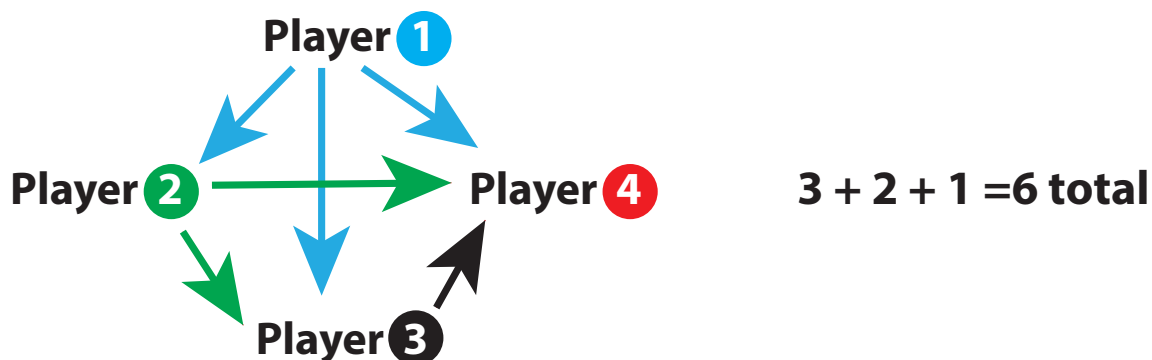
SERVE

1. Students should review the four-step problem solving method. Ask, "How have these steps proven their importance as you continue to solve challenging problems?"
2. Ask, "What do you think today's strategy, 'Acting Out the Problem,' might mean? Do you think you will have to be a good actress or actor to make this strategy work?"

RALLY

1. Here is a classic problem that can be solved using this strategy. Four players are getting ready to walk on the court for their next match. How many handshakes will take place between the four players if each one shakes every other player's hand only once? (T)(6)

Acting Out The Problem



- Let's increase the number of players. What if there were six players walking on the court? Same rules, everyone shakes everyone else's hand only once. (P)(15)

Acting Out The Problem (organized List)

Player	
6	5 handshakes
5	4 handshakes
4	3 handshakes
3	2 handshakes
2	1 handshakes
1	0 handshakes

POINT

- Acting Out the Problem works well when the numbers are small enough and you have enough friends to help out. Ask, "Can you think of a way, using paper and pencil, to solve the above problems?"
- Have students share how they tried to solve the problem using another strategy.
- Here's the final version of the problem: What if there were 24 players heading to the court and they were going to shake everyone's hand just once. How many handshakes must take place? (S)(276)

ACTIVITY 50: SEE/FIND A PATTERN

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To introduce the problem solving strategy: Acting Out the Problem	<p>Students make sense of problems and persevere in solving them.</p> <p>Students construct viable arguments and critique the reasoning of others.</p> <p>Students use appropriate tools strategically.</p> <p>Students look for and make use of structure.</p>	Patterns are everywhere. How are they helpful in problem solving?	<p>Perseverance</p> <p>Practice</p> <p>Precision</p>
MATERIALS/TIME Pencil, paper, court diagrams, chart paper/whiteboard, markers 45 MINUTES			

SERVE

1. Patterns can be found everywhere. Ask the students to describe a pattern they have seen recently. (Patterns can be simple: plaid design on clothing, bricks on the outside of a house, tiles in their kitchen or bathroom, etc.)
2. Ask the students if they can describe a pattern that might be found around a tennis court. (Example: fence around the court, the net, etc.)

RALLY

1. Let's begin with a rather simple pattern: 15, 30, 40, 15, ____, ____, ____ (T) (30, 40, 15)
Ask, "What are the next three numbers in the pattern?"
Ask, "Where have you seen or heard these numbers before?"
2. Now let's try this one: DEUCE, ADD-IN, DEUCE, ADD-OUT, DEUCE, ADD-IN, _____, _____, _____ (T) (D, A-O, D)
Ask, "What are the next three words in this pattern?"
Ask, "Where have you heard these words before?"

POINT

1. Before we present more patterns for the students to try and figure out, ask if they can create a pattern for the rest of the group to figure out...related to tennis or not.
2. Now let's begin to think of some patterns that may not have anything to do with tennis. (P)
 - 1, 3, 5, 7, ____, ____, ____ (9, 11, 13)
 - 2, 4, 8, 16, ____, ____, ____ (32, 64, 128)
 - 1, 1, 2, 3, 5, 8, 13, ____, ____, ____ (21, 34, 55...you add the previous two numbers to get the next number. This is the Fibonacci sequence, for those who may wonder where it came from.)

JUST FOR FUN

1. These are what might be called unique patterns. The students will really have to think outside the box to figure these out. (S)

- S, M, T, W, ____, ____, ____

(Sunday, Monday, Tuesday, etc.)

- J, F, M, A, M, ____, ____, ____, _S_, ____, ____, ____

(Jan., Feb., Mar., etc)

- O, T, T, F, F, S, S, ____, ____, ____, ____, ____

(One, Two, Three, Four, etc.)

- D, L, M, M, ____, ____, ____

Domingo, Lunes, Martes, Miercoles, Jueves, Viernes, Sabado.

Days of the week in Spanish!



STEM

"Connecting Education to Tennis"

Grades 6-8

ACTIVITY - TEAM BUILDING – INTERVIEWS/PAPER CHAIN

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To interview each other to discover and record likenesses and differences.</p> <p>To create a paper chain showing that we are connected to one another</p>	<p>To develop an understanding of and respect for diversity in language use, patterns and dialects across cultures, ethnic groups, geographic regions and social roles.</p>	<p>What did you learn about someone else today?</p> <p>What did someone learn about you?</p>	<p>Learning to work with partners</p>
<p>MATERIALS/TIME</p> <p>Notebooks, pencils, paper strips for paper chain, (1.5 inchesx4inches,) tape, stapler, tennis ball</p> <p>45 MINUTES</p>			

SERVE— *Whole Group Activity*

Gather kids in a circle. Tell them it is important that we learn about every member of our team starting with our names.

RALLY

1. Ask kids to introduce themselves and pass a tennis ball to any child who volunteers to go first. Ask them to say their name and tell one thing about themselves. For example,
Hi I am _____ and I like to _____. Then have that child pass or roll the ball to the next speaker.
2. Go around the circle a second time and ask each student to say hello and shake hands with the people on either side of them. Ask them to try and use the other person's name.

POINT

Interviews—Partner activity

3. Have kids get their notebooks sit with a partner.
4. Explain that they have 5 minutes (or so) to interview their partner to discover 3 or more ways they are the alike and 3 or more ways they are different.
5. They can set up their papers to look like this and jot down ideas. Or they can used the Venn diagram sheet and follow the directions at the top of the page.

Ways we are alike	Ways we are different

1. Both partners will make a chart in their notebooks. Ask them for some questions they could ask their partners.
2. Some questions they could ask their partners are:
Favorites – What is your favorite food? Team? Game? Music?
Do you have a pet?
What do you like to do after school?
Where are you from?
3. Ask kids to come back to the group and tell about their partner. Give each pair 10 strips of colored paper for a paper chain, 1 1/2 inches wide by 4 inches long, and access to tape and a stapler
4. Students will write one fact about themselves on a paper strip until they have created 5 strips about themselves.
5. Their partners will do the same. They can add sketches to the facts, decorating the strips.
6. One at a time, they will turn one paper strip into a circle creating a loop and staple. Place another strip, about their partner through the first and staple, creating the beginning of a chain. They can alternate, one fact about you, one fact about your partner. Each person can choose his or her own color to form a pattern, or not!
7. After each pair has created a chain of 10, connect them together and display in your space.

MORE WORDS

If time and enthusiasm allow, get into groups of 4, and try it again. This is a little more challenging!

REFLECTION

Turn and talk to your partner about how you participated today.

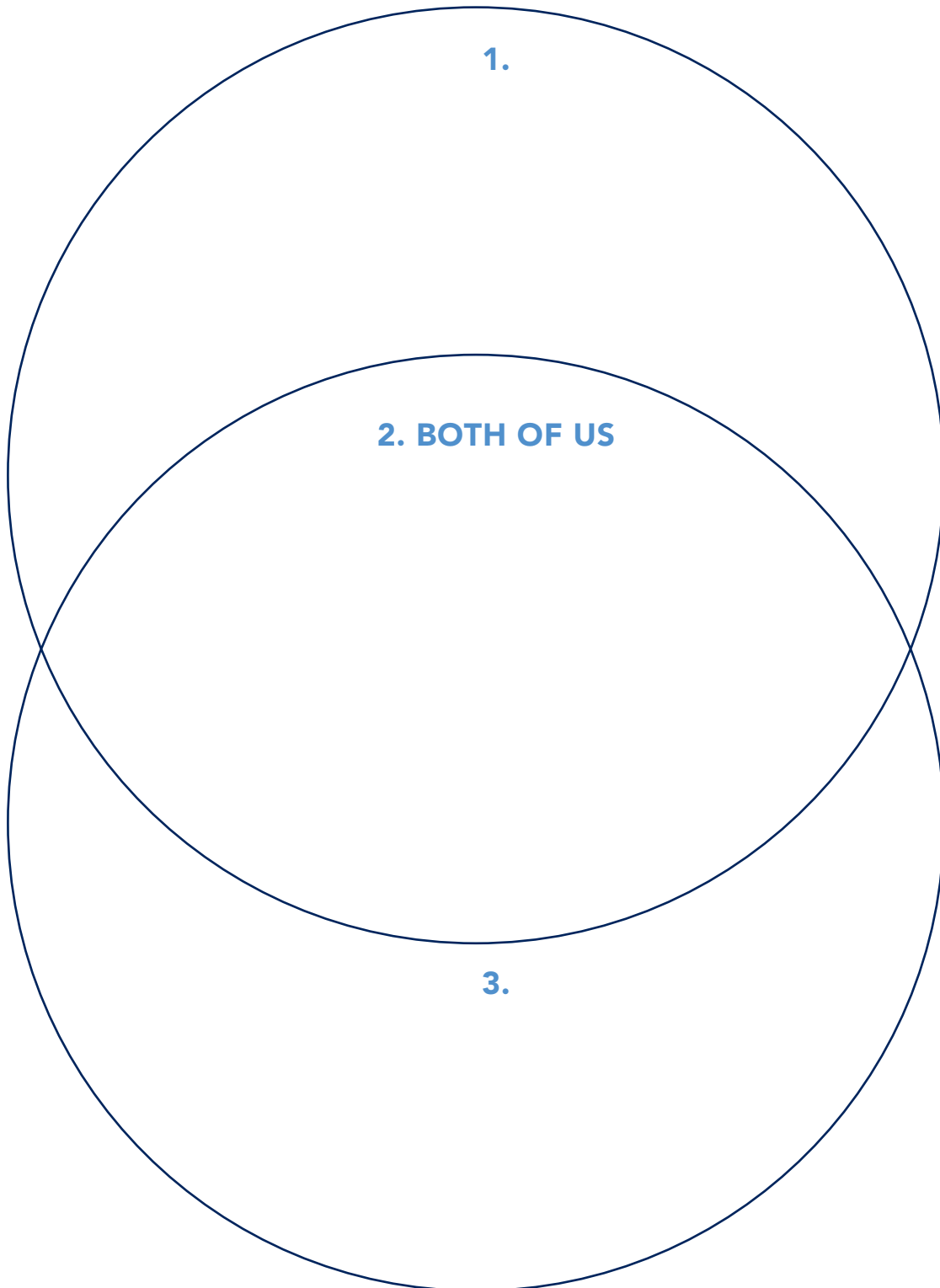
I learned something interesting about my partner

I shared something interesting about myself today

I worked well with my partner

VENN DIAGRAM

Create a Venn diagram showing ways you are alike/different. Write your name in box 1. Write about yourself in the first circle. Write your partner's name in box 3. Write just about him/her in the lower circle. Work together to write things that are TRUE for both of you in the middle section.



ACTIVITY - TEAM BUILDING – 10 AND A POEM

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To interview each other to discover and record likenesses.</p> <p>Create an acrostic poem</p>	<p>To develop an understanding of and respect for diversity in language use, patterns and dialects across cultures, ethnic groups, geographic regions and social roles.</p> <p>STEAM – Exploring and looking beyond the obvious. Presenting to classmates</p>	<p>What did you learn about someone else today?</p> <p>What did someone learn about you?</p>	<p>Learning to work with partners</p> <p>Listening carefully</p> <p>Give encouragement and express appreciation</p> <p>Decision making</p>
<p>MATERIALS/TIME Paper and pencil 30 MINUTES</p>			

SERVE

Gather students and discuss qualities of a successful teammate/student athlete – listening, offering ideas respectfully, and problem solving.

RALLY

Generate a list of things that people could have in common. Birthdays, height, hobbies. Encourage less obvious choices – oldest or youngest in family, having same number of siblings, musical taste. Tell students they will be working together to write a list and write a poem

POINT

1. Work in pairs or if group is larger, teams of no more than 4 students. Give each team a piece of paper and pencil. Have each team choose a recorder.
2. Instructor serves as a time keeper. Each team has three minutes to find 10 things they have in common. Have the recorder write them on their list.
3. When all teams have finished, give them a few minutes to decide on three things they want to share with the group.
4. Now its time to write an acrostic poem using the letters in Tennis, or any related tennis term. For example: T – together we are better. E – each of us loves to play N – neither of us likes broccoli. N – Never been to Washington DC, I – Ice cream is our favorite dessert, S – Saturday we are going to win our tournament. Encourage students to write additional poems using ACE, Net, Line, Racquet, etc.
5. Share three common traits and their acrostic poem. If time permits, students can share other things they learned about each other, and what was challenging about this task.
6. For an additional challenge, switch pairs and repeat or repeat with teams of four Reference: Adapted from - Activities and Greetings by Melissa Correa-Connoll

ACTIVITY - AERODYNAMICS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To practice and use a wide range of strategies to problem solve</p> <p>To comprehend how to create a flyable rocket</p> <p>To foster positive peer relationships</p>	<p>S- Scientific Inquiry - Motion</p> <p>T – technological design or use iPad to research NASA</p> <p>E – building and design concepts/construction</p> <p>A – visual and spatial design</p> <p>M – measuring distances, operations, geometry problem solving</p>	<p>How did you show respect today?</p> <p>Is this a project you would attempt at home?</p> <p>What was successful? What was not as successful?</p>	<p>Developing skills and confidence</p> <p>Committing to a challenge</p> <p>Demonstrate concentration and control</p>

MATERIALS/TIME

Mentor Text optional –Rosie Revere Engineer, printer paper, pencils or dowels, straws, tape, meter stick, scissors

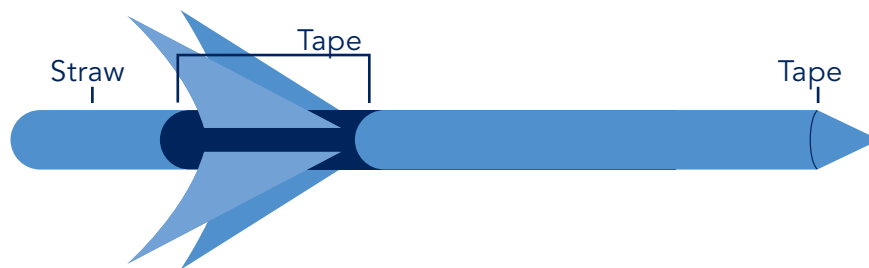
45 MINUTES more if reading mentor text

SERVE

1. Read Rosie Revere Engineer.
2. Discuss with group. Rosie thought her inventions were failures. How did she overcome this? Did she need any help?
3. Can you remember a time, either on or off court, where you failed the first time? Or many times?
4. How did you over come this? Who helped you?
5. What would you tell a younger tennis player about winning and losing points? You just missed a shot you should have been able to hit. What do you do next?

RALLY

1. Aerodynamics is the study of flight. Today you will be following directions from NASA to construct a rocket.
2. Cut a narrow rectangular strip of paper about 2 inches wide and 11 inches long and roll it tightly around a fat pencil or dowel rod.



3. Tape the long seam.
4. Cut crown points into one end of the cylinder and slip it back onto the pencil
5. Slide the crown points to the pencil tip and squeeze the points together and tape them together to seal the end to form a nose cone. An alternative to the crown points is to just fold over one end of tube and seal with tape.
6. Remove the cylinder from the pencil and gently blow into it to check for leaks. If air easily escapes use more tapes to seal leaks.
7. Cut out two sets of fins using the pattern and fold according to instructions.
8. Tape the fins near the open end of the cylinder. The tabs make taping easy.

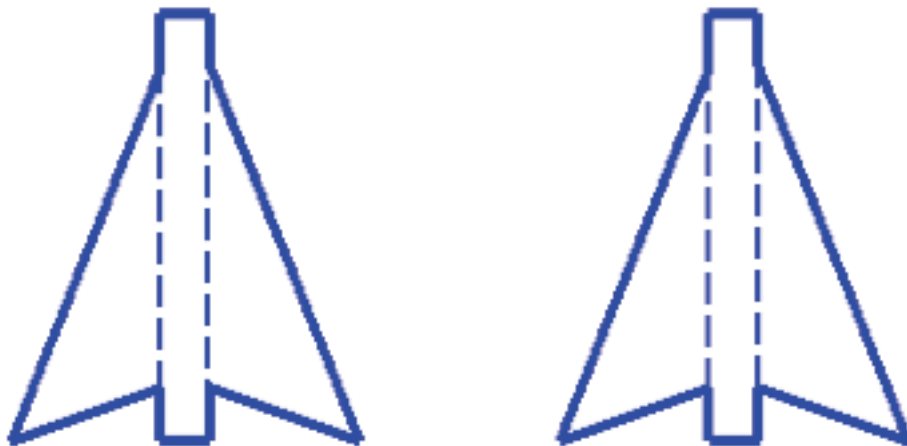
POINT

1. Demonstrate the launch procedure for the rocket. Discuss safety. Stand at one end of your launch range. Insert straw into the rocket body. Aim the rocket down the range and puff into the straw. Liftoff! Fly your rocket! Be careful not to aim the rocket towards anyone.
2. Mark off a starting point. Using meters, have each student measure how far his or her rocket flies and record on Rocket Record sheet (attached). If using record sheet, review it and review math operations (measuring by cm., calculating averages, finding difference) with all students. Practice flying the rockets towards a target. Or try making a rocket with wings so that it will glide.

Rocket directions from NASA Paper Rockets by Gregory Vogt, OSU

PATTERN FOR FINS

Cut along solid lines



Fold towards you on Dashed Lines

ROCKET RECORD

Name _____

Launch your rocket three times and record measurements below.

Flight 1 _____m

Flight 2 _____m

Flight 3 _____m

Average distance _____m

(to calculate average, add distances from each flight and then divide by 3)

Round 2

Distance Prediction _____m

Flight 1 _____m

Flight 2 _____m

Flight 3 _____m

Average Distance _____m

Difference Prediction

The difference between your prediction and average flight

_____cm

What changes could you make to your rocket to improve flight distance?

What changes could you make to improve accuracy?

Revised from 3-2-1 Puff – NASA Rockets Educator Guide

For information on aerodynamics and tennis, visit the Tennis Ball section of the Time Warner Connect a Million Minds site at connectamillionminds.com.

ACTIVITY - NET PRODUCTS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To practice multiplication facts and addition to problem solve To build relationships with others to pose and solve problems To foster positive peer relationships	Develop a quick recall of multiplication facts and fluency with whole number multiplication Participate as knowledgeable, reflective, creative and critical members of a community	How did you show respect for others today? Is this a game you would play at home? What was successful? What was not as successful?	Developing skills and confidence Taking turns and working fairly Respecting ourselves and others
MATERIALS/TIME Playing cards, tennis racket score sheet, pencils, multiplication table 45 MINUTES			

SERVE

1. Explain that multiplication and addition are important for use in algebra throughout middle school and beyond. This game is designed to have tennis inspired fun practicing multiplication and addition.
2. Discuss fair ways to decide who is going first and who will deal the cards. Ask, how will you decide who is going to deal first?

RALLY

1. Remove the Jacks, Queens, Kings and Aces from a deck of playing cards.
2. Shuffle the deck and deal five cards to each player.
3. The dealer takes the next card from the deck and puts it face up on the table. This is the multiplier.

POINT

1. Each player must multiply one of their cards by the multiplier and record the product on the score sheet.
2. For example, if the multiplier is 2, and your hand is 5, 8, 2, 7, 4, you will choose which card to play to score the most points. In this hand, you might play the 8 to score 16 points.
3. Now your opponent, the dealer, must choose one of their cards to multiply by the 8 that you played and record their score. They would announce the score and then it is your turn again. The non-dealing player plays first.
4. After all 5 cards are played, the scores are totaled to see who wins the round. Player with the highest total wins the round.
5. For the next round, the other player becomes the dealer. The dealer collects and shuffles cards, deals 5 cards each and turns over a card to act as first multiplier.
6. Play 5 rounds then total scores from all 5 rounds to see who wins the game.

MORE WAYS TO PLAY!

1. First, learn the game with two players. After the first game, switch opponents. Play with a new friend.
2. Play in teams. Two opponents on each side. One hand per team.
3. Instead of one multiplier, play with two multipliers. This increases the strategy portion of the game.
4. Deal each player ten cards. Then, each player chooses 5 to play and discards the other 5.
5. Deal each player 10 cards. They choose 5 cards to play. They keep 4, and must give one card to their opponent. In turn, they receive one card from their opponent.
6. Instead of playing 5 cards, play through the deck.

ROUNDS

PRODUCT TOTAL

	A	B	C	D	E
1					
2					
3					
4					
5					

Multiplication Table

NET Products

X	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

ACTIVITY - SCIENTIFIC PROCESS OPTION 2

SPAGHETTI AND MARSHMALLOW TOWERS

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>To practice and use a wide range of strategies to problem solve</p> <p>To build relationships with others to pose and solve problems</p> <p>To foster positive peer relationships</p>	<p>S – scientific process</p> <p>T – research tallest tower</p> <p>E – building concepts/ construction</p> <p>A – visual and spatial design</p> <p>M – shapes and angles in 3D Problem solving</p>	<p>What was one good decision you made today?</p> <p>Is this a project you would attempt at home?</p> <p>What was successful? What was not as successful?</p>	<p>Developing skills and confidence</p> <p>Communicating as partners</p> <p>Taking turns and working fairly</p>
<p>MATERIALS/TIME</p> <p>Spaghetti and mini marshmallows, sheet</p> <p>45 MINUTES</p>			

SERVE

1. Ask: How tall is the tallest tower in the world? Collect and accept all reasonable guesses.
2. Using technology, discover the name, height and location of the world's 3 tallest towers.
3. Scientists often work toward answering a question. The question today is "What is the tallest structure you can build using spaghetti and marshmallows?"
4. Assign partners or small groups and distribute lab sheet.

RALLY

1. Refer to lab sheet. Group members will write their names on lab sheet. Explain that each team will complete one lab sheet.
2. First task is to write a hypothesis, a prediction, a good guess, about your work today. For example, if we use 12 pieces of spaghetti, and 12 marshmallows we will create the tallest tower at about 24 inches tall.

POINT

1. Scientists use images to plan and clarify their thinking. Sketch your design on the lab sheet. Use as much detail as possible. If you would like to alter your design or need additional materials, you MUST sketch a new tower design first.
2. When team finishes their designing, they may take spaghetti and marshmallows shown in their sketch and begin constructing.
3. Walk to each group and monitor construction. You may want to comment on teamwork, good communication, thinking hard, cooperation, and participation as it occurs.
4. When teams have completed their tower, ask each group to present their tower to the group. Ask them what worked and what did not work in this experiment.
5. They can set up their papers to look like this and jot down ideas. Or they can use the Venn diagram sheet and follow the directions at the top of the page.

Have fun!

TOWERS

Group Members

What is the tallest structure you can construct using uncooked spaghetti and marshmallows?

Hypothesis:

We will use _____ to build our structure to be _____ tall.

Sketch your design below. Include as much detail as possible. If you alter from this design, or need additional materials, sketch out a new tower first.

First design

Second design

Reflect – What worked or did not work today? What question would you like to explore next?

ACTIVITY - DESIGN CHALLENGE - FREE STANDING TOWERS

OUTCOMES	STEAM	REFLECTION	SEL/TENNIS CONNECTION
<p>To practice and use a wide range of strategies to problem solve</p> <p>To build relationships with others to pose and solve problems</p> <p>To foster positive peer relationships</p>	<p>S – scientific process</p> <p>T – research tallest tower</p> <p>E – building concepts/ construction</p> <p>A – visual and spatial design</p> <p>M – shapes and angles in 3D Problem solving</p>	<p>How did you show respect today?</p> <p>Is this a project you would attempt at home?</p> <p>What was successful? What was not as successful?</p>	<p>Developing skills and confidence</p> <p>Communicating as partners</p> <p>Taking turns and working fairly</p>
<p>MATERIALS/TIME</p> <p>A few examples of pre-made paper blocks, copies of worksheet, paper, pencils, ruler, tape, scissors</p> <p>45 MINUTES</p>			

SERVE

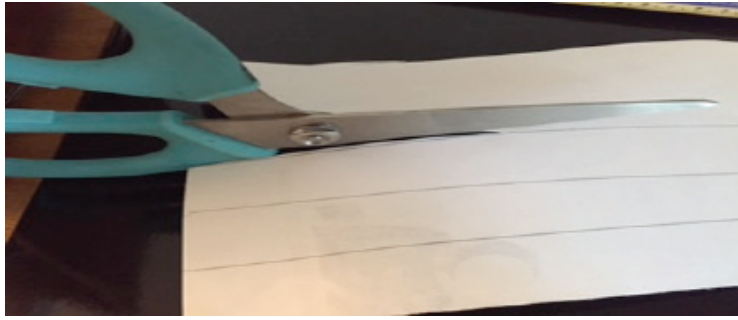
1. Ask: How tall is the tallest tower in the world? Collect and accept all reasonable guesses.
2. Using technology, discover the name, height and location of the world's 3 tallest towers.
3. Scientist often work toward answering a question. The question today is "What is the tallest structure you can build using triangular paper blocks?"
4. Assign partners or small groups and distribute lab sheet

RALLY

5. Refer to lab sheet. Group members will write their names on lab sheet. Explain that each team will complete one lab sheet.
6. First task is to write a hypothesis, a prediction, a good guess, about your work today. For example, if we use 12 paper blocks, we will create the tallest tower at about 24 inches tall.

POINT

1. Scientists use images to plan and clarify their thinking. Sketch your design on the lab sheet. Use as much detail as possible. If you would like to alter your design or need additional materials, you can sketch a new tower design first.
2. Show students examples of triangular blocks that you made. Then explain how to create triangular building blocks and cut planks
 - Select your first piece of paper and place it on a table. Using a ruler, draw a line vertically at the 1-inch and 2-inch, and 3 marks and cut your paper completely at the 3-inch mark.



Cut at 3 inch line, then...

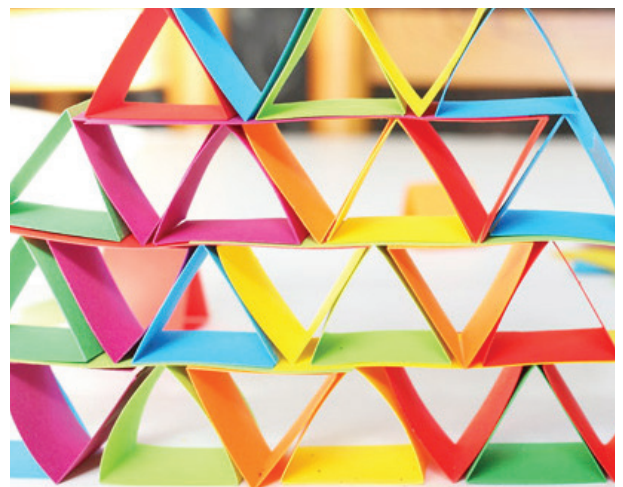
Place the cut paper on the table. Fold the paper into thirds, using your drawn lines as a guide.



Tape the open edges together to form a triangle.



- Repeat process and make as many triangular blocks that you think the team will need.
 - Cut some paper "planks," 1-inch strips of paper. They can be 3 to 6 inches long. When team finishes creating their building blocks, they can begin constructing.
3. Start positioning the triangles in a row alternating between triangles that are right side up and upside down. Add a plank or two on top of each layer. When you have a few layers you can test how strong your paper structure is by balancing objects on top of it.
 4. Walk to each group and monitor construction. You may want to comment on teamwork, good communication, thinking hard, cooperation, and participation as it occurs.
 5. When teams have completed their tower, ask each group to present their tower to the group. Ask them what worked and what did not work in this experiment.



TOWERS

Group Members

What is the tallest structure you can construct using folded paper?

Hypothesis:

We will use _____ to build our structure to be _____ tall.

Sketch your design below. Include as much detail as possible. If you alter from this design, or need additional materials, sketch out a new tower first.

First design

Second design

Reflect – What worked or did not work today? What question would you like to explore next?

ACTIVITY - TEAM BUILDING – WORDFOTO

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>Students will learn to research various tennis topics by posing the right questions</p> <p>Students will have an appreciation for the latest technology found in tennis</p> <p>Students will demonstrate their connection to tennis</p>	<p>To develop an understanding of and respect for diversity in language use, patterns and dialects across cultures, ethnic groups, geographic regions and social roles.</p>	<p>What did you learn about someone else today?</p> <p>What did someone learn about you?</p>	<p>Learning to work with partners</p> <p>Listening carefully</p> <p>Give encouragement and express appreciation</p>
<p>MATERIALS/TIME</p> <p>Notebooks, pencils, ipads with WordFoto app (\$1.99), The Best Part of Me, printout of venn diagram (if using)</p> <p>45 MINUTES</p>			

SERVE

Gather students in a circle. Tell them it is important that we learn about every member of our team starting with our names.

RALLY

1. Ask students to introduce themselves and pass a tennis ball to any student who volunteers to go first. Ask them to say their name and tell one thing about themselves. For example,
Hi I am _____ and I like to _____. Then have that student pass or roll the ball to the next speaker.
2. Go around the circle a second time and ask each student to say hello and shake hands with the people on either side of them. Ask them to try and use the other person's name.

POINT

Interviews—Partner activity

1. Have students get their notebooks and sit with a partner.
2. Explain that they have 5 minutes (or so) to interview their partner to discover 3 or more ways they are the alike and 3 or more ways they are different.
3. They can set up their papers to look like this and jot down ideas. Or they can use the Venn diagram sheet and follow the directions at the top of the page.

<p>Ways we are alike</p>	<p>Ways we are different</p>

1. Both partners will make a chart in their notebooks. Ask them for some questions they could ask their partners.
2. Some questions they could ask their partners are:
 - Favorites – What is your favorite food? Team? Game? Music?
 - Do you have a pet?
 - What do you like to do after school?
 - Where are you from?
 - What do you want people to know about you?
 - What is your shining moment?
3. Ask students to select 6 words that describe their partners. Write them in a list.
4. Read a few selections from *The Best Part of Me*. Discuss the photographs and what makes a photo interesting. (contrast, close-up, clarity etc.)
5. Use the iPad to show the students the WordFoto app. Demonstrate how to use it. Show several samples of what you can create with it.
6. Using the iPad, students will take a few photos of each other. They will select one that is clear and shows the best contrast. Make sure each partner is happy with the photo.
7. Using WordFoto on the iPad, each student will create a WordFoto to teach the group about their partner. Their partners will do the same.
8. If possible, save and print the WordFoto. If not, have the partners introduce their partner sharing the WordFoto from their iPad. If possible, print the WordFotos later and bring to next session.

OTHER IDEAS

If iPads are unavailable you can complete this activity by:

*Students can draw a self-portrait and write words about themselves around the drawing.

*Using magazines, students can create a collage about themselves or work together to create one collage about the two of them.

*Using butcher paper, students can create a mural about the group, using graffiti, images and words.

READ ALOUD

The Best Part of Me – share the photos as well as the text

ACTIVITY: TAP – KRYPTO MATH CARD GAME

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Students will develop strategies for finding solutions using the Krypto math game Students will explore the use of the Order of Operations (PEMDAS)	S-Scientific Process T-Technology (Online Version) E-Engineering A-Arts M-Math (Algebraic Thinking)	What does PEMDAS stand for? Did you get frustrated? How did you handle your frustration? How could playing the Krypto game help you on the tennis court?	Teamwork Cooperation Persistence
MATERIALS/TIME Technology-iPads/Computers, Deck of Krypto Cards 45 MINUTES			

SERVE

- Ask the students, "What is the Order of Operations in mathematics?"
 - Mathematicians must all follow the same rules when solving an equation. Just like we all follow the same rules when playing tennis, math has rules, too!
 - The Order of Operations in mathematics lets us know what operation to do first, second, etc. The order that must be followed is: Parenthesis, Exponents, Multiplication OR Division, Addition OR Subtraction (PEMDAS). The easiest way for students to remember this is with this phrase: Please Excuse My Dear Aunt Sally
- Krypto is a game played with a deck of 52 cards. There are three of each number 1-10, two of each number from 11-17, and 1 of each number from 18-25.
 - When starting out, you may want to just use the 1-10 cards and then move on to 1-17 before using all the cards.
 - Make sure you start out at a comfortable level so the students don't become frustrated.

RALLY

- Rules for the game are quite simple: Deal 5 cards number side up in the middle of the table. These are your working numbers. Deal a sixth card number side up. This is your target number.
- Example: Working number cards - 2, 1, 2, 2, 3 Target card – 20
 - One solution might be $(2+1) \times 3 \times 2 + 2$. This would read $2+1=3$ $3 \times 3=9$ $9 \times 2=18$ $18+2=20$ (Numbers in bold are the cards dealt)
- In the beginning, this game is best played with partners so that everyone has a chance to understand the game.
- Common questions: Do we have to use all 5 cards? YES
Do we have to use them in the order they were placed on the table? NO
Must we use all the different operations? NO • May we use parenthesis? YES
May we put two numbers together to make a double-digit number? (ie: a 2 and a 3 to make 23) NO

SERVE

1. Time to start playing!
 - a. Have the students sit in groups of 2-4
 - b. Work as a team to solve the equations
2. After the groups are comfortable, have them compete against the other groups
3. When the students are very comfortable with the game, individual competitions can begin.
(Tennis analogy-doubles or singles)



ADDITIONAL INFO

Purchase info: <http://www.mphgames.net/index.php?which=order> (Bulk is \$8/set)

If you don't want to buy the set or you want multiple sets, you could easily make a set of Krypto cards using 3"x5" cards.

The game is also available to play online at: <http://illuminations.nctm.org/Activity.aspx?id=3569>

ACTIVITY - TENNIS EQUIPMENT—IT USED TO LOOK LIKE THAT?

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>Students will learn to research various tennis topics by posing the right questions</p> <p>Students will have an appreciation for the latest technology found in tennis</p> <p>Students will demonstrate their connection to tennis</p>	<p>S-Scientific Process</p> <p>T-Technology</p> <p>E-Engineering</p> <p>A-Arts</p> <p>M-Math</p>	<p>What did you learn about the history of tennis equipment?</p> <p>How has the equipment changed the game?</p> <p>Would you like to research more about tennis?</p> <p>How do you 'connect' to tennis?</p>	<p>Teamwork</p> <p>Cooperation</p> <p>Honoring ourselves</p>
<p>MATERIALS/TIME</p> <p>Technology-iPads/Computers, Cardstock Paper, Pencils, Markers</p> <p>45-90 MINUTES</p>			

SERVE

- Ask the students to describe the tennis racket that they play with?
 - What is it made of? Is it all one piece? Are they all the same?
 - Why is there padding on the grip? Etc.
- What do you think the strings are made of? How long is the string?
- Why are the strings woven? Must they be woven?
- Have tennis rackets always looked this way?
- What about the tennis ball? Has it always looked like the ones we use today?

RALLY

- Ask students to write down how they might research answers to these questions and more about tennis equipment.
- Provide students with iPads/computers to research, with a partner, the many questions we have about the history of tennis equipment.
 - If technology is not available for the students, printouts from various websites can be provided. A listing of websites that could be used can be found at the end of this activity.
- Have partners begin to list interesting facts about the equipment used in tennis. Organize this information on three sheets of paper - Racket, String, Ball
- Now ask the students to think about who THEY are as a person? As a tennis player? As a student? As a family member? As a community member?
- Now ask the students, "Who are your heroes, mentors and people that you look up to?"
- Have each student take two different color pieces of 8 ½"x11" cardstock. (Cut one paper lengthwise and the other widthwise)
- Fill the lengthwise pieces (8) with interesting facts you have found out about the history of tennis equipment.
- Fill the widthwise pieces (11) with information about who you are and those people who have had an influence in your life. Remember that they can be people you have met or people you know about through sports, history, news, etc.

POINT

1. Time to start weaving!
 - a. Lay your eight 11" strips down in front of you.
 - b. Weave your eleven 8" strips in between the other longer strips.
2. Take a look at what you have created! Woven like the strings of a tennis racket, there you are, the person and the sport that you love.

WEBSITE/RESOURCES FOR RESEARCHING

1. History of Tennis Rackets
<http://www.tennisracketsuk.com/history-of-tennis-rackets/>
2. Evolution of Tennis Rackets
<http://www.tennisnuts.com/shop/tennis/tennis-rackets/racket-guides/evolution-of-tennis-rackets.html>
3. An Evolutionary History of Tennis Racquets
<http://tennis.about.com/od/racquetsballsstringing/a/evolmodracquet.htm>
4. Tennis Racket History
<http://www.sportsknowhow.com/pops/tennis-racquet-history.html>
5. Was This How Tennis was Introduced?
<http://www.athleticscholarships.net/history-of-tennis.htm>
6. Spaghetti Strung Racquets
<http://www.physics.usyd.edu.au/~cross/SPAGHETTI%20STRUNG%20RACQUETS.htm>
7. Strings (Tennis)
[https://en.wikipedia.org/wiki/Strings_\(tennis\)](https://en.wikipedia.org/wiki/Strings_(tennis))
8. Making a racket: The science of tennis
<https://plus.maths.org/content/science-tennis>
9. Why are Tennis Balls Fuzzy?
<https://www.youtube.com/watch?v=45dzvOvkBYM>
10. Tennis Ball
https://en.wikipedia.org/wiki/Tennis_ball
11. Behind the Fuzz: History of the Tennis Ball
<http://tennisweek.com/behind-the-fuzz-history-of-the-tennis-ball/>
12. History of Tennis
<http://www.history.co.uk/study-topics/history-of-football-tennis/history-of-tennis>

ACTIVITY - WELLNESS - THE MENTAL GAME

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
To practice and use a wide range of strategies to problem solve To create a unique visual pattern To foster positive peer relationships	S – Scientific process T – Use iPad to research Zentangle patterns E – Building concepts/ construction A – Visual and spatial design M – Shapes and angles Problem solving	How did you show respect today? Is this a project you would attempt at home? What was successful? What was not as successful?	Developing skills and confidence Committing to a challenge Demonstrate concentration and control

MATERIALS/TIME

Mentor Text –Rosie Revere Engineer, Sharpee or Micro thin black pens, card stock or any quality paper cut into 3x3 squares, Zentangle for Kids or examples from web

45 MINUTES

SERVE

1. Read *Rosie Revere Engineer*.
2. Discuss with group. Rosie thought her inventions were failures. How did she overcome this? Did she need any help?
3. Can you remember a time, either on or off court, where you failed the first time? Or many times?
4. How did you over come this? Who helped you?
5. What would you tell a younger tennis player about winning and losing points? You just missed a shot you should have been able to hit. What do you do next?

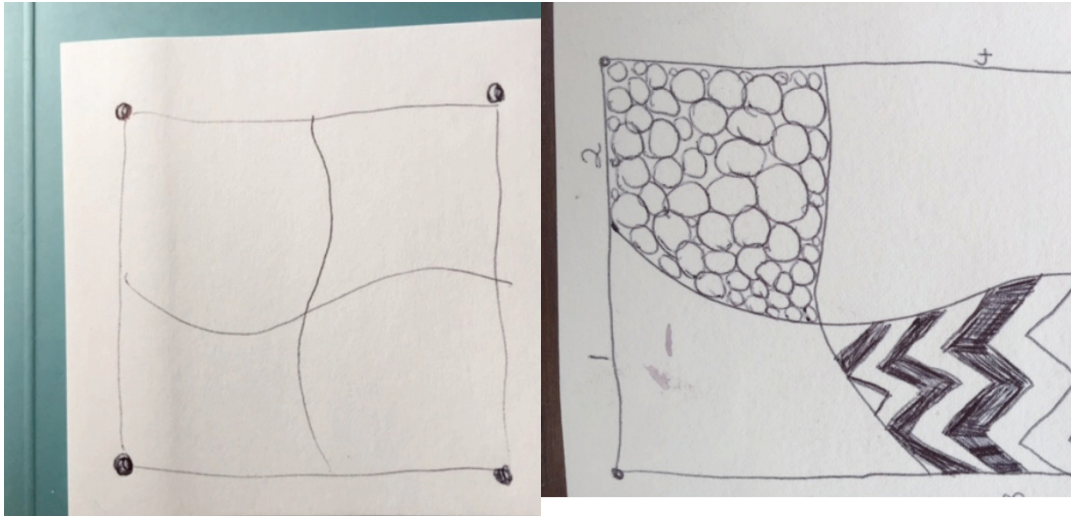
RALLY

1. Engineering and tennis require concentration, or the ability to stay in the present. You also need commitment to maintain drive and stamina. You need control over the ball and racquet, your emotions and behavior, including bad weather, noisy crowds, etc. Tennis requires that you have confidence in yourself; you must believe that you can handle what happens on the court.
2. Today you will be practicing all four of those abilities. Explain that the challenge today will be to create Zentangle inspired art.

POINT

1. Zentangle is a method of creating artwork by drawing tangles, or patterns, one line at a time. It focuses the mind, relaxes the body and develops confidence.
2. Zentangle is different from doodling. It begins with drawing strings. Strings are pencil lines that separate spaces on your paper. The spaces are then filled with tangles or patterns. Tangles have names.
3. To begin, use your pencil and draw a dot in each corner. Join the dots to create a border.

4. Draw two strings as a guide to separate spaces on your paper. Here is one example.



5. Next, you will use tangles or patterns to fill in the four spaces you have created. A black Sharpie is used for this step. The top left tangle is filled with tennis balls, or in zentangle language, Tipple. The zig-zag pattern is called Static. There are over 100 Tangles to learn and of course you can create your own.
6. Other tangles that are helpful to beginners are Crescent Moon, Florz, and Knightsbridge.
7. Take your time. Remember concentration, commitment, control and confidence are needed to meet this challenge!
8. Another shape to tangle is done by tracing your hand, or the hand of your friend. You can tangle inside your initial too.

RESOURCES

Zentangle for Kids - Jane Marbaix

Yoga for the Brain – Tangle Cards – Sandy Steen Bartholomew, CZT

ACTIVITY: HOW ARE A FRISBEE AND TENNIS BALL ALIKE?

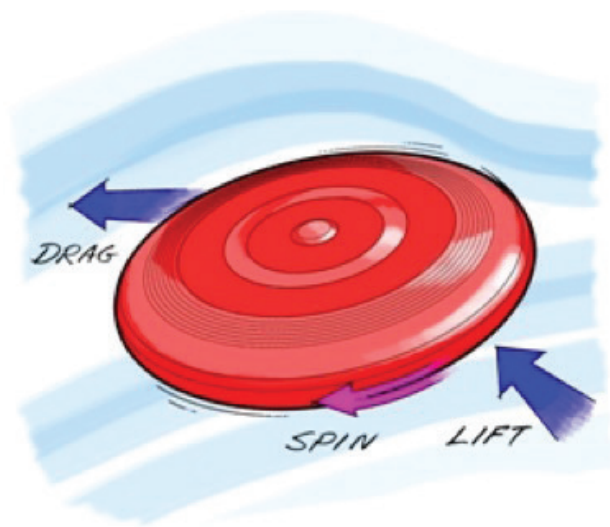
OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Students will be introduced to the terms Gravity, Friction, and Aerodynamics Students will be introduced to the terms spin, lift and drag.	Mathematics as: Problem Solving, Communication, and Reasoning. Mathematical Connections	How did I demonstrate cooperation today?	Teamwork Cooperation
MATERIALS/TIME Frisbees, Tape measure, Paper, Pencils 45-90 MINUTES			

SERVE

- Ask, "How many of you have thrown a Frisbee?"
 - For students who may not have had the opportunity, find a location where they might 'toss' one a couple of times.
- Have the students list what they remember having to do in order to get the Frisbee to fly a long distance.
- What roll does gravity play in throwing a Frisbee?
- What is friction? Will a Frisbee encounter friction as it flies through the air?
 - No... Friction only occurs with solid objects
 - The Frisbee will encounter 'air resistance', however.

RALLY

- Have the students list what they think is necessary to get the Frisbee to fly the farthest.
- Ask them to think about what would happen if they threw the Frisbee straight up in the air?
- Ask, "Can you throw a Frisbee without any spin?" "What happens when you do?"
- If technology is available, do a little research on Frisbees and why they fly.
- Introduce the term 'aerodynamics' to the students. Aerodynamics is the way air moves around things.
- Introduce the term 'drag' to the students. Drag is the force that acts opposite to the direction of motion. Drag is caused by friction and/or differences in air pressure.

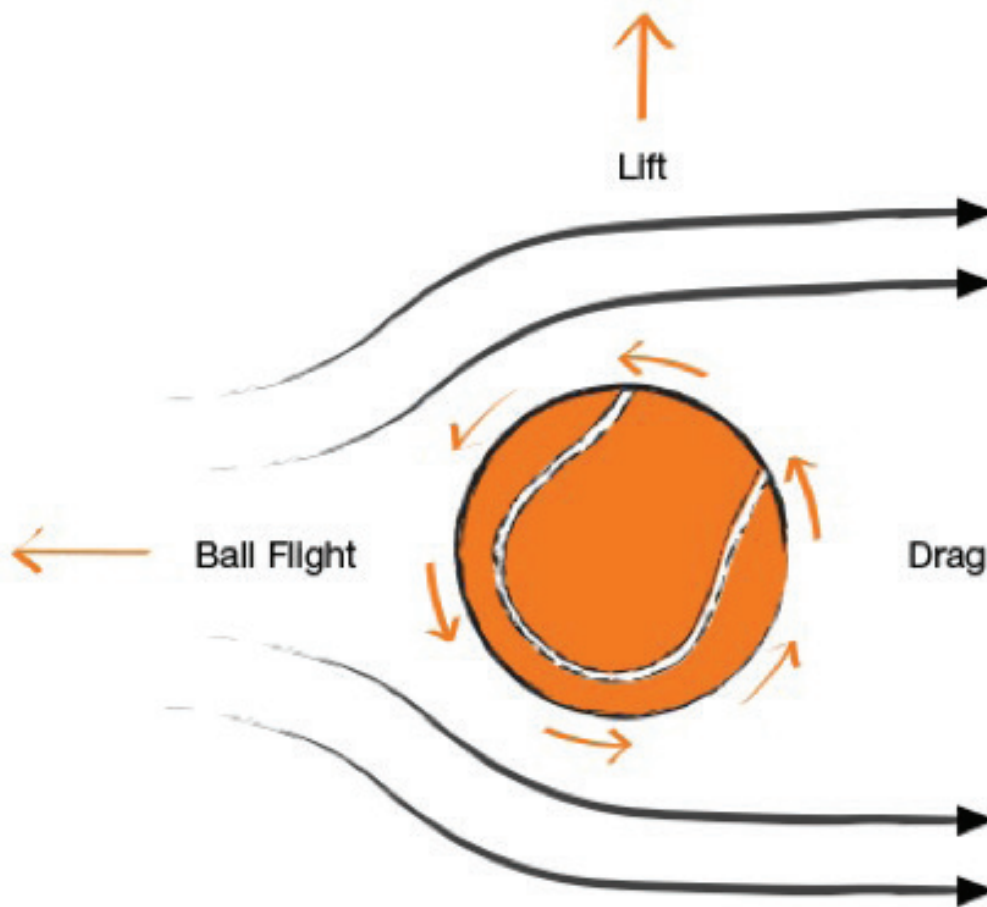


POINT

1. Time to throw those Frisbees!
 - a. Divide into teams. Take turns throwing the Frisbee. Measure your distance from where you let it go to where it touched the ground. Record your toss.
 - b. After every one on your team has had several tosses, add up your distances and find the average distance for your team.
 - c. Compare your average with the averages of the other teams. Discuss why they are similar or different? Was everyone using the same type of Frisbee? Are they the same size and weight? What about the people on each team?
2. What happened to make the Frisbees fly the farthest?
3. Do weather conditions have an effect on the Frisbees flight?

TIME WARNER CABLE CONNECTION

At the TWC website, Connect a Million Minds, you will find an interesting section on the **Tennis Ball**. In this piece, they explain how gravity, lift and drag can affect the tennis ball.



ACTIVITY - SPIN, MAGNUS, SPIN

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
Students will be introduced to the 'Magnus Effect' Students will be introduced to the concept of high and low pressure created by a spinning ball.	Mathematics as: Problem Solving, Communication, and Reasoning. Mathematical Connections	How did I demonstrate cooperation today?	Teamwork Cooperation
MATERIALS/TIME Sheets of medium sandpaper, cardboard mailing tubes, ping pong balls, white glue, markers, rulers, scissors 45-90 MINUTES			

SERVE

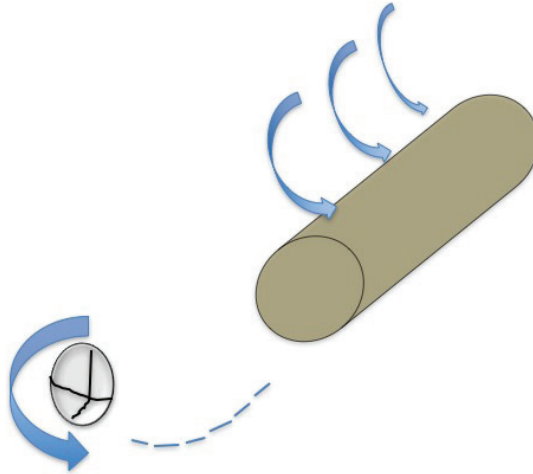
1. Ask the students to think of objects that can spin.
(Washing machines and dryers, windmill, tops, pinwheel, yo-yo, etc.)
2. What makes the object spin? What happens as it spins?
3. Are there any objects in sports that spin?
4. Ask students to write down their thoughts and ideas about the importance/lack of importance of spin in our lives.

RALLY

1. Discuss 'spin' in sports. On the board or chart paper, write down the student's ideas about spin in sports. (Soccer, baseball, football, tennis, etc.)
2. Ask the students if they think that spin plays an important part in these games.
3. If technology is available, do a little research on spin.
4. Introduce the term 'Magnus Effect' to the students. A spinning ball moving through the air produces a difference in air pressure on each side of the ball.
5. Have the students construct a 'Magnus Machine':
 - a. Find 2 foot length mailing tubes (52¢ per tube/case of 50)
 - b. Insert the sandpaper into the tube (grit side facing in)
 - c. Make sure the ping pong ball still fits through the tube
 - i. Ping pong balls have a diameter of 40 millimeters (1.57") (\$9/144)
 - d. Place glue on the smooth side of the sandpaper and slide it back into the tube (the sandpaper should be flush with one end of the tube)
 - e. Use a marker to draw 2 circles at right angles around the ping pong ball to help see the spinning action.

POINT

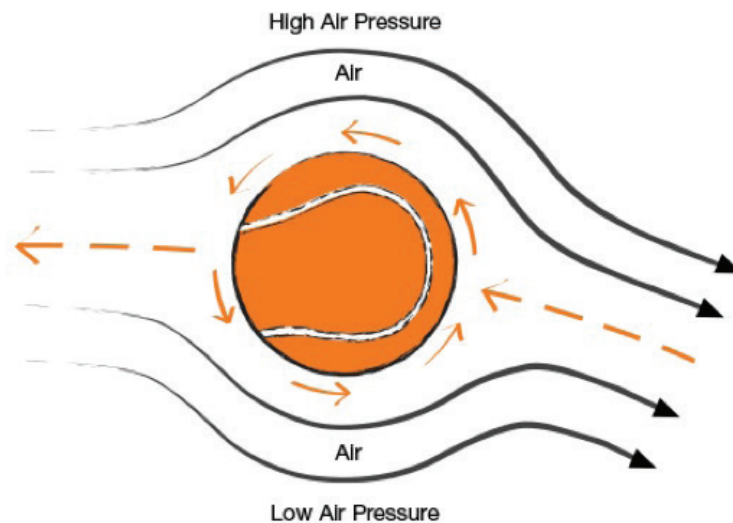
1. Time to practice throwing curves!
 - a. Hold the tube in your throwing hand at the opposite end of the sandpaper.
 - b. Quickly swing the tube horizontally (parallel to the floor) through the air.
 - c. The ball should shoot out and curve as it flies forward.



2. Targets (tennis ball cans, cups, tennis racquets, etc.) can be set up at different angles and attempted to hit with curved shots.
3. Experiment with underhand throws. Which way do you think the ball will curve?
4. Experiment with over hand throws. Which way will the ping pong ball curve now?

TIME WARNER CABLE CONNECTION

At the TWC website, Connect a Million Minds, you will find an interesting section on the Tennis Serve. In this piece, they explain the Magnus Effect and its importance in serving.



ACTIVITY: FROM CATAPULT TO BALL MACHINE

Newtown's Third Law of Motion

OUTCOMES	STANDARDS	REFLECTION	SEL/TENNIS CONNECTION
<p>Students will be introduced to the scientific method- Observation, Hypothesis, Prediction, Experiment, Conclusion</p> <p>Students will be introduced to Newtown's Third Law of Motion</p> <p>Students will research the history of catapults</p> <p>Students will construct a catapult out of predetermined materials</p>	<p>S-Scientific Process</p> <p>T-Technology (Online Version)</p> <p>E-Engineering</p> <p>A-Arts</p> <p>M-Math (Algebraic Thinking)</p>	<p>Who is Sir Isaac Newtown?</p> <p>What was an interesting fact you learned about catapults?</p> <p>How does a tennis ball machine work?</p> <p>How many designs did you experiment with before your final construction?</p> <p>How might working on this project help you on the tennis court?</p>	<p>Teamwork</p> <p>Cooperation</p> <p>Persistence</p>
<p>MATERIALS/TIME</p> <p>Technology-iPads/Computers, Masking tape, 4 Rubber Bands, 2 Plastic Cups, 2 Plastic Spoons, 2 Paperclips, 6" x 6" Piece of Cardboard, Large Marshmallow (Per Team/Group)</p> <p>45 MINUTES</p>			

SERVE

1. Ask the students if they have ever heard of Sir Isaac Newton. What do they already know about him?
2. Research Newton, paying close attention to when he lived and how he was 'different' than his peers. Ask, "What were Newton's Three Laws of Motion?"
3. Now ask the students if they know what a catapult is? Have they ever seen one? What does it do? Why were they first created? Which of Newton's Laws would a catapult fall into?
4. Ask the students, "Have you ever seen or used a ball machine on the tennis court?" "How about in a batting cage for baseball?"
 - a. How do they work? Is there only one type?
 - b. Research ball machines. What do people say about them?
Can they help you improve your game?
5. Compare catapults to ball machines. How are they alike? How are they different?

RALLY

1. List the steps found in the Scientific Method. (Observation [Research], Hypothesis [Possible Solution], Prediction [How You Will Demonstrate], Experiment [Test], Conclusion [Summary])
2. Divide the students into groups to work on this project. Groups can be to your liking, based on your students. Group size could be two to four.
3. Within your time constraints, have the student groups research catapults. If technology is not available, printouts could be used.
4. Now let the groups know what items each of the groups will be working with:
 - a. One yard of masking tape
 - b. 4 Rubber Bands
 - c. 2 Plastic Cups
 - d. 2 Plastic Spoons
 - e. 2 Paperclips
 - f. 6"x 6" Piece of Cardboard
 - g. One Large Marshmallow
5. Each student in the group should come up with their own hypothesis (solution) to constructing the catapult. Group members will share and discuss their designs.
6. As groups experiment, they should be writing down changes they have made and the results from their tests.

POINT

1. Time to share the catapults!
 - a. Looking for distance...how far did the marshmallow go?
 - b. Looking for accuracy...how close to a centerline did the marshmallow land?
2. Each group may have two chances to 'fire' their marshmallows but they may not make changes to their catapult.
3. Keep a record of each groups distance and accuracy. Discuss why some worked better than others? Share what it was like for your group going through this project?

ADDITIONAL INFO

If you would like groups to write out their experience, try these questions:

1. What went well for your group during the testing phase?
2. What problems did you face?
3. How did the group handle having to come to consensus on a final design?
4. From where did the catapult get its energy?

RESOURCES

- Isaac Newtown and Physics for Kids by Kerrie Logan Hollihan
- Catapult <https://en.wikipedia.org/wiki/Catapult>
- What is a catapult? <http://www.catapults.info>
- History of Catapults <https://sites.google.com/site/physicsofcatapults/home/history-of-catapults>