2ND GRADE
SOLIDS & LIQUIDS
SCIENCE UNIT

2012 Christopher Columbus Family Academy's
Training for All Teacher's Summer Curriculum Institute

Team Leader: Leslie López, 2nd Grade Bilingual Teacher
Team Member: Carmen Conyer, 2nd Grade Spanish Component Teacher
Team Member: Kristin Mariano, 2nd Grade English Component Teacher

A modification to
the New Haven
Public Schools'
Science Curriculum
to promote
academic success
for all English
Language Learners.
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2012 TAT Summer Curriculum Institute

Date: Monday, June 25, 2012

Team Leader: Leslie A. López, 2nd Grade Bilingual Teacher

Team Members: Carmen Conyer, 2nd Grade Spanish Component Teacher
Kristin Mariano, 2nd Grade English Component Teacher

Curriculum: New Haven Public Schools 2nd Grade Science Curriculum

Goal:

Our goal for the TAT Summer Curriculum Unit will be to modify and enhance the assessment portion of the 2nd Grade New Haven Public Schools' Solids and Liquids Science Unit.

Currently, the curriculum unit consists of eight (8) areas of assessment:
1. Pre and Post Unit Assessments
2. Science Journals
3. Record Sheets
4. Class Lists, Charts, and Venn Diagram
5. Class Discussions
6. Student Presentations
7. Teacher Observations
8. Individual Student Conferences

Objective:

As a team, we will be modifying these eight (8) areas into the following:
1. Student Portfolio – will contain four (4) of the current areas of assessment (#2, #3, #4, #6)
2. Pre and Post Assessments – one (1) of each assessment (#1)
3. Class Discussion and Teacher Observations will be renamed as Teacher Observation/Student Participation (#7, #5)
4. Individual Student Conferences – focus on oral testing of concept words, sorting/classification of solids, liquids and gases (#8)
5. Teacher Implemented Assessments – four (4) total written assessments, one (1) to be administered after each set of four (4) lessons (there are 16 lessons for the entire unit)

In each of the five (5) modified areas of assessments, the team will create a rubric for each of the five (5) areas as one does not exist for any of the original areas of assessment.

We will be meeting as a team starting on Monday, June 25, 2012 at 9:00 a.m. – 3:00 p.m. through Thursday of the same week. On Friday, June 29, 2012, we will be meeting for 3 hours from 9:00 a.m. to 12:00 p.m.

If you have any questions, please feel free to contact the Team Leader, Leslie López, at:

Email: leslie.lopez@new-haven.k12.ct.us
Phone: 203-804-4369
### III. Student Portfolio

<table>
<thead>
<tr>
<th>Lessons</th>
<th>Journal Entries</th>
<th>Record Sheets</th>
<th>Lesson Data</th>
<th>Reading Stories</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>X</td>
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<tr>
<td>4</td>
<td>X</td>
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<tr>
<td>5</td>
<td>X</td>
<td></td>
<td>Hardness Chart</td>
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<td>6</td>
<td></td>
<td>X</td>
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<td>7</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>8</td>
<td>X</td>
<td>X</td>
<td>Solids Properties Chart</td>
<td>X</td>
</tr>
<tr>
<td>9</td>
<td></td>
<td></td>
<td>Venn Diagram with Writing</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td>Liquids Properties Chart</td>
<td></td>
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<tr>
<td>11</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>12</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
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<tr>
<td>13</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>XXX</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16</td>
<td></td>
<td></td>
<td>Classification Chart</td>
<td></td>
</tr>
</tbody>
</table>

### Section I: Journal Entries

1. There will be eight (8) journal entry assignments throughout the unit (Lessons 1, 2, 4, 5, 8, 10, 11, and 16).
2. Each journal entry will be graded using the same rubric the New Haven Public Schools (NHPS) uses to assess writing pieces on Language Art (LA) benchmark tests (NHPS writing rubric has been included in the Rubrics section of this unit):
   a. 0 = no, unrelated response, no detail
   b. 1 = incomplete response, missing details to support answer, missing capitalization/punctuation
   c. 2 = complete response/makes sense, details included, appropriate capitalization/punctuation
3. The total range of points a student can accumulate from this portion of their portfolio will be from 0-16.
4. The Journal Entry rubric can be found in the Rubrics section of this unit.

### Section II: Record Sheets

1. There will be ten (10) record sheet assignments for this unit (Lessons 3, 6, 7, 9, 12, 13, 14, and three (3) for lesson 15).
2. Each record sheet will be graded based on completion of assignment (at the end of the lesson).
3. Each record sheet will count as a zero (0) for an incomplete OR a one (1) for completion.
4. Total range of points student can accumulate for this portion of their portfolio will be from 0-10.
5. The Record Sheet rubric can be found in the Rubrics section of this unit.
Section III: Lesson Data (Charts, Graphs, Diagrams)

1. There will be six (6) lesson data assignments for this unit (Lessons 5, 8, 9, 10, 11, and 16).
2. Each lesson data assignment will be graded differently as each requires the student to perform a specific task:
   a. **Hardness Chart:** This chart will be graded from 0-5 points. Students will be working with five (5) objects and identifying how “hard” they are on the chart (ranging from soft to hard).
   b. **Properties Chart:** Each student selects and completes one (1) of the five (5) solid properties chart (hardness, color, shape, rolls, and stacks). Each chart will be graded from 0-5 points.
   c. **Solids Properties Chart:** This solids properties chart will be graded from 0-5 points; five (5) solids to be used for this activity.
   d. **Venn Diagram with Writing:** Venn Diagram which will count for three (3) points; the writing portion will range from 0-2 points (using the NHPS writing rubric).
   e. **Liquids Properties Chart:** This liquids properties chart will be graded from 0-4 points based on the four (4) liquids utilized in the lesson.
   f. **Classification Chart:** Students will sort ten (10) items that are a solid or a liquid. This chart will be graded from 0-10 points.
3. Each Lesson Data rubric can be found in the **Rubrics** section of this unit.

Section IV: Student Presentation

1. Students will need to compare one solid with one liquid for their presentation.
2. Students need to use a chart, graphic organizer, or diagram to show their findings of each matter.
3. Each presentation will last no more than five (5) minutes (depending on their individual/group abilities).
4. Students will work in pairs or in groups of three (3) students.
5. The Student Presentation rubric can be found in the **Rubrics** section of this unit.

IV. Pre & Post Assessment Tests

1. Pre-Test Assessment will be administered during Lesson 1.
2. Post-Test Assessment will be administered after Lesson 16, “Lesson 17.”
3. Each test will consist of 5 questions addressing solids and liquids.
4. Each question will range from 0-1 points, with a total range of 0-5 points.
5. The test has been included in the **Pre & Post Assessment Tests** section of this unit.
6. The rubric for this test can be found in the **Rubrics** section of this unit.
V. Teacher Observation/Student Participation

1. There will be sixteen (16) teacher observations/student participation entries for this unit.
2. Each lesson will be counted as one (1) observation/participation grade for each student based on their involvement in the lesson.
3. Total range of points that can be accumulated for this section will be 0-16 points.
4. The rubric for this can be found in the Rubrics section of this unit.

VI. Individual Student Conferences

1. There will be two (2) individual student conferences, one (1) for solids and one (1) for liquids.
2. Students will be orally tested to complete a sorting/classifying task for both solids and liquids.
3. Students will be asked to sort five (5) solid items and five (5) liquid items into their appropriate category by property.
4. Each correct item placed into its appropriate property will receive one (1) point; students can score up to ten (10) points in all.
5. The Individual Student Conferences rubric can be found in the Rubrics section of this unit.

VII. Teacher Implemented Assessments

1. There will be four (4) teacher implemented assessments, one (1) administered after each set of four (4) lessons.
2. The first three (3) assessments will have five (5) questions: the first three (3) questions are multiple choice, the last two (2) questions are open-ended.
3. The last assessment will have three (3) questions. The first question is multiple choice, the last two (2) questions are open-ended.
4. Each test will be graded differently as a result of the varying open-ended questions and their expected responses.
5. Multiple choice questions will be graded from 0-1 point; 0 = incorrect, 1 = correct
6. Each Teacher Implemented Assessment rubric can be found in the Rubric section of this unit.
Rolling and Stacking Solids

- Roll
- Stack
Record Sheet 6-A

Name: ____________________  Date: ____________________

Floating and Sinking

Float

Sink

STC® / Solids and Liquids
Testing Solids with a Magnet

Is the solid attracted to the magnet?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

STC® / Solids and Liquids
**Record Sheet 9-A**

Name: ____________________________

Date: ____________________________

**Two New Solids**

<table>
<thead>
<tr>
<th></th>
<th>Button</th>
<th>Sponge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shape</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hardness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rolls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stacks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floats or sinks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Magnetic</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparing the Flow and Shape of Liquids
Record Sheet 13-A

Name: ___________________  Date: ___________________

Racing Drops

I think ________________ will win the race because

Circle the name of the liquid that wins.
Record Sheet 14-A

Name: _______________________

Date: _______________________

Mixing Liquids

My liquid is _______________________.

I predict _______________________.

Before stirring

After stirring
Two New Liquids

Describe how the corn syrup looks and feels and how it flows.

Describe how the red shampoo looks and feels and how it flows.
Two New Liquids, continued

Mixing corn syrup and water

Before stirring

After stirring

Mixing red shampoo and water

Before stirring

After stirring
Two New Liquids, continued

I think ____________

will win the race because ____________

Circle the name of the liquid that wins.
Hardness Property Chart

**Directions:** Place each solid object in the chart below using your sense of touch to feel how soft or hard the object is.

Softest ________________________________ Hardest
**Hardness Property Chart**

**Directions:** Place each **solid** object in the chart below using your sense of touch to feel how soft or hard the solid object is.

<table>
<thead>
<tr>
<th>Softest</th>
<th></th>
<th></th>
<th>Hardest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soft = smooth or delicate in texture, can be broken easily</td>
<td></td>
<td></td>
<td>Hard = firm in texture, not easily breakable</td>
</tr>
</tbody>
</table>

![Images of objects to represent softest and hardest]
**Hardness Property Chart**

**Directions:** Place each **solid** object in the chart below using your sense of touch to feel how soft or hard the solid object is.

- **Softest**
  - Soft = smooth or delicate in texture, can be broken easily

- **Hardest**
  - Hard = firm in texture, not easily breakable
**Color Property Chart**

**Directions:** Place each solid object in the chart below by color.

<table>
<thead>
<tr>
<th>Color #1</th>
<th>Color #2</th>
<th>Color #3</th>
<th>Color #4</th>
<th>Other Colors</th>
</tr>
</thead>
</table>

**Colors** = Red, Orange, Yellow, Green, Blue, Purple

**Other Colors** = Gray, Brown, Black, White
Color Property Chart

**Directions**: Place each solid object in the chart below by color.

<table>
<thead>
<tr>
<th>Red</th>
<th>Orange</th>
<th>Green</th>
<th>Blue</th>
<th>Other Colors</th>
</tr>
</thead>
</table>

**Other Colors** = Yellow, Gray, Brown, Black, White
Color Property Chart

**Directions:** Place each solid object in the chart below by color.

<table>
<thead>
<tr>
<th>Red</th>
<th>Orange</th>
<th>Green</th>
<th>Blue</th>
<th>Other Colors</th>
</tr>
</thead>
</table>

Other Colors = **Yellow, Gray, Brown, Black, White**
# Shape Property Chart

**Directions:** Place each solid object in the chart below by its shape.

<table>
<thead>
<tr>
<th>Shape #1</th>
<th>Shape #2</th>
<th>Shape #3</th>
<th>Shape #4</th>
<th>Other Shapes</th>
</tr>
</thead>
</table>

Shapes = Circle, Square, Triangle, Rectangle

Other Shapes = Oval, Polygon (Trapezoid, Hexagon, Parallelogram)
# Shape Property Chart

**Directions:** Place each solid object in the chart below by its shape.

<table>
<thead>
<tr>
<th>Circle</th>
<th>Square</th>
<th>Triangle</th>
<th>Rectangle</th>
<th>Other Shapes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Other Shapes =** Oval, Polygon (Trapezoid, Hexagon, Parallelogram)

![Images of shapes](image-url)
Shape Property Chart

Directions: Place each solid object in the chart below by its shape.

<table>
<thead>
<tr>
<th>Circle</th>
<th>Square</th>
<th>Triangle</th>
<th>Rectangle</th>
<th>Other Shapes</th>
</tr>
</thead>
</table>

Other Shapes = Oval, Polygon (Trapezoid, Hexagon, Parallelogram)
Venn Diagram for Liquids

Directions: Compare and contrast the two liquids.
Liquid Property Chart

**Directions:** Observe and record the appearance and texture of each liquid.

<table>
<thead>
<tr>
<th>Liquid #1</th>
<th>Liquid #2</th>
<th>Liquid #3</th>
<th>Liquid #4</th>
</tr>
</thead>
</table>

**Liquid Properties**
Color, Transparency, Texture, Odor/Odorless, Viscosity, Miscibility
# Liquid Property Chart

**Directions:** Observe and record the appearance and texture of each liquid.

<table>
<thead>
<tr>
<th>Liquid #1</th>
<th>Liquid #2</th>
<th>Liquid #3</th>
<th>Liquid #4</th>
</tr>
</thead>
</table>

**Liquid Properties**
- Color
- Transparency
- Texture
- Odor/Odorless
- Viscosity
- Miscibility

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2012 TAT Summer Curriculum Institute | Conyer, López & Mariano
# Liquid Property Chart

**Directions:** Observe and record the appearance and texture of each liquid.

<table>
<thead>
<tr>
<th>Liquid #1</th>
<th>Liquid #2</th>
<th>Liquid #3</th>
<th>Liquid #4</th>
</tr>
</thead>
</table>

**Liquid Properties**
Color, Transparency, Texture, Odor/Odorless, Viscosity, Miscibility
### Classification Chart

**Directions:** Classify the ten (10) items as a **solid** or a **liquid** by their properties.

<table>
<thead>
<tr>
<th>Solids</th>
<th>Liquids</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Solid Properties**
- Hardness, Color, Shape, Rolls,
- Stacks, Floats, Sinks, Magnetic

**Liquid Properties**
- Color, Transparency, Texture,
- Odor/Odorless, Viscosity, Miscibility
D. Student Presentation

This section is dedicated to students presenting a solid or liquid by working in either pairs or in a small group of three students.

The criterion for the student presentation is the following:

1. Students will need to compare one solid with one liquid for their presentation.
2. Students need to use a chart, graphic organizer, or diagram to show their findings of each matter.
3. Each presentation will last no more than five (5) minutes (depending on their individual/group abilities).
4. Students will work in pairs or in groups of three (3) students.
5. The Student Presentation rubric can be found in the Rubrics section of this unit.
IV. Pre and Post Assessment Tests

Name ___________________________ Date _______________________

Unit 1: Solids and Liquids
Pre – Test

1. What is a solid?

2. What are some properties that we can use to describe solids?

3. What is a liquid?

4. What are some properties we can use describe liquids?

5. How are solids and liquids different?
Unit 1: Solids and Liquids
Pre - Test

1. What is a solid?
   a. An object that is hard.
   b. An object that is soft.
   c. An object that does not change shape.
   d. An object that is long.

2. What are some properties that we can use to describe solids?
   a. color, shape, and hardness
   b. names, dates, and months
   c. amount, price, and color
   d. earth, wind, and fire

3. What is a liquid?
   a. Something that can change shape and is loosely connected.
   b. A substance that you drink.
   c. Something that is sticky.
   d. Something that is cold and sweet.

4. What are some properties we can use to describe liquids?
   a. flow, viscosity and miscibility
   b. Gatorade, Sprite, and Pepsi
   c. magnetic, hard, and furry
   d. wet, yellow, and blue

5. How are solids and liquids different?
Unit 1: Solids and Liquids
Post - Test

1. What is a solid?

2. What are some properties that we can use to describe solids?

3. What is a liquid?

4. What are some properties we can use describe liquids?

5. How are solids and liquids different?
Unit 1: Solids and Liquids
Post – Test

1. What is a solid?
   e. An object that is hard.
   f. An object that is soft.
   g. An object that does not change shape.
   h. An object that is long.

2. What are some properties that we can use to describe solids?
   e. color, shape, and hardness
   f. names, dates, and months
   g. amount, price, and color
   h. earth, wind, and fire

3. What is a liquid?
   e. Something that can change shape and is loosely connected.
   f. A substance that you drink.
   g. Something that is sticky.
   h. Something that is cold and sweet.

4. What are some properties we can use to describe liquids?
   e. flow, viscosity and miscibility
   f. Gatorade, Sprite, and Pepsi
   g. magnetic, hard, and furry
   h. wet, yellow, and blue

5. How are solids and liquids different?
V. Teacher Observations/Student Participation

The criterion for this portion of the unit is the following:

1. There will be sixteen (16) teacher observations/student participation entries for this unit.
2. Each lesson will be counted as one (1) observation/participation grade for each student based on their involvement in the lesson.
3. Total range of points that can be accumulated for this section will be 0-16 points.
4. The rubric for this can be found in the Rubrics section of this unit.
VI. Individual Student Conferences

The criterion for this portion of the unit is the following:

1. There will be two (2) individual student conferences, one (1) for solids and one (1) for liquids.
2. Students will be orally tested to complete a sorting/classifying task for both solids and liquids.
3. Students will be asked to sort five (5) solid items and five (5) liquid items into their appropriate category by property.
4. Each correct item placed into its appropriate property will receive one (1) point; students can score up to ten (10) points in all.
5. The Individual Student Conferences rubric can be found in the Rubrics section of this unit.
Unit 1: Solids and Liquids
Lessons 1 – 4 Assessment

1. We can compare and sort two solid objects by the ________________.
   a. drinking
   b. counting
   c. writing
   d. shape

2. A characteristic of a solid that can be stack is ________________.
   a. long
   b. short
   c. flat
   d. round

3. One characteristic of a solid that rolls is that is ________________.
   a. flat
   b. long
   c. round
   d. Short

4. Identify two (2) differences between the chair and the table.

5. Identify two (2) similarities between the apple and the ball.
Unit 1: Solids and Liquids
Lessons 5 – 9 Assessment

1. What word can be used to describe how hard something is?
   e. soft 
   f. yellow 
   g. large 
   h. solid 

2. A characteristic of an object that floats is that it is ________________.
   e. very dense. 
   f. less dense. 
   g. big. 
   h. small. 

3. A characteristic of a magnetic object is that it is ________________.
   e. cold 
   f. long 
   g. made of cotton 
   h. made of metal 

4. Which object would be attracted to a magnet, a paper clip or a piece of paper? Explain.
   __________________________________________________________
   __________________________________________________________
   __________________________________________________________

5. How would you sort the following objects by their properties?
   1.  
   2.  
   3.  
   4.  
   5.  
   __________________________________________________________
Unit 1: Solids and Liquids
Lessons 10 – 13 Assessment

1. We can compare two liquids by their ________________.
   a. shape
   b. color
   c. taste
   d. size

2. A characteristic of a liquid is that it is ________________.
   a. flat
   b. hard
   c. large
   d. shapeless

3. If you pour a liquid into a bowl, it will take the shape of a ________________.
   a. square
   b. rectangle
   c. bowl
   d. triangle

4. List three (3) different liquids.
   1. ________________
   2. ________________
   3. ________________

5. If you were to spill oil and water on a table surface, which one will travel/move faster? Explain why.
   __________________________________________________________________________________
1. What happens when you pour oil into water?
   i. They mix together.
   j. They change color.
   k. The oil floats on top of the water.
   l. They become a solid.

2. What are the similarities and differences between corn syrup and water?
   ____________________________________________________________
   ____________________________________________________________
   ____________________________________________________________

3. What are the similarities and differences between shampoo and water?
   ____________________________________________________________
   ____________________________________________________________
## Journal Entry Rubric

<table>
<thead>
<tr>
<th>0 Points</th>
<th>1 Point</th>
<th>2 Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>No response, or minimal response</td>
<td>Incomplete response</td>
<td>Complete response</td>
</tr>
<tr>
<td>No detail(s) included to support answer</td>
<td>1 Detail included; missing details to support answer</td>
<td>2 Details included to support answer</td>
</tr>
<tr>
<td>Response does not make sense</td>
<td>Response makes some sense</td>
<td>Response makes complete sense</td>
</tr>
<tr>
<td>No punctuation or capitalization</td>
<td>Improper punctuation and capitalization</td>
<td>Appropriate punctuation and capitalization</td>
</tr>
</tbody>
</table>

**Notes/Observations:**

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________

____________________________________________________________________
# Record Sheet Rubric

<table>
<thead>
<tr>
<th>Record Sheet</th>
<th>Complete</th>
<th>Incomplete</th>
<th>Total Completed Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#7</td>
<td></td>
<td></td>
<td></td>
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**GRAND TOTAL**

Notes/Observations:

_________________________________________________________________
_________________________________________________________________
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# Hardness Property Chart Rubric

**Lesson 5: Testing the Hardness of Solids**

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<tr>
<td>Solid #2</td>
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<tr>
<td>Solid #5 Hardest</td>
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**GRAND TOTAL**

**Notes/Observations:**

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### Property Chart Rubric

**Lesson 8: Sorting Solids**

Property Sorted by: ________________________________

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**Notes/Observations:**

_________________________________________________________________
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# Solids Properties Chart Rubric

Lesson 9: Button & Sponge

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<th></th>
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<td>Incorrect</td>
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<td></td>
<td>Correct</td>
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<td>Incorrect</td>
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**Notes/Observations:**

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# Venn Diagram With Writing Rubric

## Lesson 10: Comparing Glue and Water

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</tr>
<tr>
<td>Liquid #2: Water</td>
<td></td>
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<tr>
<td>Both</td>
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## Writing Score

**GRAND TOTAL**

### Notes/Observations:

__________________________________________________________________________

__________________________________________________________________________

__________________________________________________________________________
Liquid Property Chart Rubric
Lesson 11: Observing and comparing the appearance and feel of liquids.

<table>
<thead>
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<tr>
<td>Liquid #1</td>
<td></td>
<td></td>
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<tr>
<td>Liquid #2</td>
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<td>Liquid #3</td>
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<td>Liquid #4</td>
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Notes/Observations:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
## Classification Chart Rubric

**Lesson 16: Sorting items by solids and liquids**

<table>
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<tbody>
<tr>
<td>Item #1 Solid</td>
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<td>Item #5 Liquid</td>
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<td>Item #6 Liquid</td>
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<td>Item #7 Solid</td>
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### Notes/Observations:

________________________________________

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________________________________________
# Student Presentation Rubric

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<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>Speaking</td>
<td>Speaks in short phrases, difficult to hear or understand.</td>
<td>Speaks using some complete sentences.</td>
<td>Speaks clearly, using complete sentences, and maintains eye contact with audience.</td>
</tr>
<tr>
<td>Visuals</td>
<td>No use of visuals.</td>
<td>Visuals are in accurate, unrelated, or unclear.</td>
<td>Accurate visuals that relate to presentation</td>
</tr>
<tr>
<td>Content and Ideas</td>
<td>Demonstrates little understanding of subject.</td>
<td>Demonstrates some knowledge of subject area.</td>
<td>Demonstrates knowledge of subject area. Uses relevant vocabulary and details.</td>
</tr>
</tbody>
</table>

**GRAND TOTAL**

**Notes/Observations:**

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

______________________________________________________________

2012 TAT Summer Curriculum Institute | Conyer, López & Mariano
B. Pre and Post Assessment Test Rubrics

Name ________________________________

Pre – Assessment Tests Rubric Date ________________

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Post – Assessment Tests Rubric Date ________________

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Notes/Observations:

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________________________________________
C. Teacher Observation/Class Participation

Name ____________________________ Date ________________

**Teacher Observation/Class Participation Rubric**

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**GRAND TOTAL**

**Notes/Observations:**

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
# Individual Student Conference

**Solids**

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<td>Shape</td>
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<td>Hardness</td>
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<td>Rolls</td>
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<tr>
<td>Floats</td>
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<tr>
<td>Sinks</td>
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**Notes/Observations:**

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53
## Individual Student Conference

**Liquids**

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**GRAND TOTAL**

### Notes/Observations:

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Assessment 1 Rubric
Lessons 1 – 4

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<td>Question #3 (1pt)</td>
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<tr>
<td>Question #4 (2pts)</td>
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<td>Question #5 (2pts)</td>
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**GRAND TOTAL**

Notes/Observations:

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## Assessment 2 Rubric

**Lessons 5 – 9**

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<tr>
<td>Question #2 (1pt)</td>
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<tr>
<td>Question #3 (1pt)</td>
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<td></td>
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<tr>
<td>Question #4 (2pts)</td>
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**GRAND TOTAL**

**Notes/Observations:**

________________________________________________________________________

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________________________________________________________________________
Assessment 3 Rubric  
Lessons 10 – 13

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<td>Question #3</td>
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Notes/Observations:

____________________________________________________________________

____________________________________________________________________

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# Assessment 4 Rubric

Lessons 14 – 16

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**GRAND TOTAL**

**Notes/Observations:**

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________
IX. Appendix

1. Record Sheets 3, 6, 7, 9, 12, 13, 14, and 15
2. Reading Stories 4, 9, and 14
Rolling and Stacking Solids

Roll

Stack
Rodamiento y apilación de sólidos

Rodar

Apilar
The 20 Solids
The 20 Solids, continued
The 20 Solids, continued
Hoja de registro 6-A

Nombre: ___________________________ Fecha: ___________________________

Flotación y hundimiento

Flotar

Hundir
# Record Sheet 7-A

**Name:**

**Date:**

---

## Testing Solids with a Magnet

Is the solid attracted to the magnet?

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
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Hoja de registro 7-A

Nombre: 

Fecha: 

Probando los sólidos con un imán

¿Atrae el imán al sólido?

<table>
<thead>
<tr>
<th>Sí</th>
<th>No</th>
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<tbody>
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Record Sheet 9-A

Name: ________________________________

Date: ________________________________

Two New Solids

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</tr>
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<tbody>
<tr>
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<td>Shape</td>
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<td>Hardness</td>
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<td>Stacks</td>
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<td>Floats or sinks</td>
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</table>

STC® / Solids and Liquids
Hoja de registro 9-A

Nombre:  
Fecha:  

Dos sólidos nuevos

<table>
<thead>
<tr>
<th></th>
<th>Botón</th>
<th>Esponja</th>
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<td>Color</td>
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<td>Dureza</td>
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<td>Magnético</td>
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Comparing the Flow and Shape of Liquids
Comparando el flujo y la forma de los líquidos
Racing Drops

I think ____________________________

Circle the name of the liquid that wins.

will win the race because ____________________________

__________________________

__________________________

__________________________

__________________________

__________________________
Hoja de registro 13-A

Nombre: ___________________________ Fecha: ___________________________

Competencia de gotas

Yo creo que ___________________________

Haz un círculo alrededor del líquido que gane.

ganará la competencia porque

______________________________

______________________________

______________________________

______________________________
Record Sheet 14-A

Name: ____________________________

Date: ____________________________

Mixing Liquids

My liquid is ____________________________

I predict ____________________________

Before stirring

After stirring

STC® / Solids and Liquids
LECCION 14

Hoja de registro 14-A

Nombre: 

Fecha: 

Mezclando líquidos

Mi líquido es 

Yo predigo 

Antes de revolverse 

Después de revolverse 

STC² / Sólidos y líquidos
Two New Liquids

Describe how the corn syrup looks and feels and how it flows.

Describe how the red shampoo looks and feels and how it flows.
Two New Liquids, continued

Mixing corn syrup and water

Before stirring

After stirring

Mixing red shampoo and water

Before stirring

After stirring

STC* / Solids and Liquids
Two New Liquids, continued

I think ________________________________

will win the race because ________________________________

Circle the name of the liquid that wins.

______________________________
Hoja de registro 15-A

Nombre: ____________________________

Fecha: ____________________________

Dos líquidos nuevos

Describe cómo se ve, se siente y fluye el jarabe de maíz.

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

Describe cómo se ve, se siente y fluye el champú rojo.

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________

____________________________________________________________________________________
Dos líquidos nuevos, continuación

Mezclando jarabe de maíz y agua

Antes de revolver

Después de revolver

Mezclando champú rojo y agua

Antes de revolver

Después de revolver
Hoja de registro 15-A
Nombre: ___________________________ Fecha: ___________________________

Dos líquidos nuevos, continuación

Yo creo que ___________________________

ganará la competencia porque ___________________________

Haz un círculo alrededor del líquido que gane.
Sorting Solids: Scientists Do It Every Day!

Dr. Michael Wise and Dr. Sorena Sorensen work at the National Museum of Natural History of the Smithsonian Institution in Washington, D.C. They are geologists—scientists who study rocks and minerals.

The mineral and rock collection at the Smithsonian includes more than 380,000 pieces. Some are almost too small to see. Some are as big as a buffalo.

All rocks and minerals are solids. In fact, one mineral, the diamond, is the hardest solid on earth. Have you ever found a rock or mineral and wondered what kind it was?

Just like the solids you have been exploring in science class, rocks and minerals can be described and sorted by their properties. Sorting rocks and minerals is a big job, because there are hundreds of different types. Geologists like Dr. Sorensen and Dr. Wise group rocks and minerals by families. They call a mineral family a species.

How do geologists sort minerals? They observe their properties. They often use a magnifying lens or microscope. Sometimes they do tests on the minerals.
According to Dr. Sorensen, some of the rocks in the museum's collection are nearly 4 billion years old!
One property of solids—color—can be tricky. This is because the same mineral can come in many colors. For example, the mineral quartz can be pink, purple, brown, or yellow. Sometimes it is as clear as ice. You can’t identify a mineral just by its color.

What property do you think Dr. Wise and Dr. Sorensen find most helpful? It’s one that you have explored in class.

If you said shape, you are right! Each mineral family, or species, has its own shape.

Even though quartz is found in many colors, it always has the same shape. Quartz always has six sides. Some minerals have a cube shape. The shape of a mineral is always the same because the tiny, tiny particles that make up each mineral are always arranged in the same pattern.

So, when Dr. Sorensen and Dr. Wise begin to identify a mineral, they look at its shape. How many sides does it have? Is the mineral long and thin, like a pencil? Or is it round, like a baseball? Do some of its sides come together in points? By answering these questions, they can identify a mineral and sort it into the right species.
But sometimes the geologists need extra help. They can't always see the special shape of the mineral or the way its tiny particles are arranged, even with a powerful microscope.

Then Dr. Wise takes the mineral down the hall to a special kind of X-ray machine. He puts the mineral on a small shelf inside the machine and takes an X-ray. The X-ray gives him an "inside view" of the mineral, just like an X-ray of your arm tells your doctor whether you broke a bone when you fell off your bicycle. With the X-ray, Dr. Wise can see how the tiny particles inside the mineral are arranged. Then he can identify the mineral.

*Sorting minerals with Dr. Wise.*
Dr. Sorensen and Dr. Wise are now working on a new permanent exhibit in the museum called “Geology, Gems, and Minerals.” It will have rocks and minerals from all over the world. One section will focus just on the shape of minerals.

If your family takes a vacation to Washington, D.C., you might want to visit this exhibit. You might even see Dr. Sorensen or Dr. Wise leading a tour through the exhibit.

And now that you have learned how geologists sort minerals, you can explore them on your own. Because rocks and minerals aren’t just in museums. These solids are “on display” right in your own backyard!
Snow Friends

“Guess what, April. It’s snowing!”

When she heard her mother’s voice, April jumped out of bed. She ran to the window. A blanket of snow covered the yard. “Maybe you would like to build a snowman today,” her mother said.

It was April’s first snowfall. Her family had just moved to Michigan from Florida. April couldn’t wait to go outside and start her snowman.

She put on her warm coat, boots, a hat, and gloves. “Wow, it’s cold out here,” she said as she stepped into the snow. She looked up. Long icicles hung from the gutter of her house.

April started to roll a ball of snow for her snowman. It was hard work!

After a while, she heard a voice behind her. “Do you need some help? I have two buttons we can use for the eyes. And a carrot for a nose. I even have a long red scarf to put around his neck.”
April turned around. It was Lakeesha, her neighbor. The girls began to work together. When they were done, the snowman was taller than April!

April's mother came out to take a picture. "There you are," Mother said. "April, Lakeesha, and the snowman. Three snow friends."

The next morning, Lakeesha came over to April's house. The sun was shining. It was a lot warmer.

Splash! April looked up. The long icicles were melting, and one of the drops hit April right on her head. The solid ice had turned to water!
“Look at our snowfriend, Lakeesha,” April said. “Yesterday, he was taller than I am. Today, I am taller than he is. Did I grow overnight?”

“No, April. He’s melting. The warm sun is making him melt.”

April looked at the snowfriend. His head was tilted. His ears were drooping. The ground near the snowfriend was squishy.

April felt sad. She and Lakeesha had worked so hard to build it. “What can we do?” she said. “I don’t want our snowfriend to melt.”

“I have an idea,” said Lakeesha. She whispered it into April’s ear.

“Great,” said April. She ran into the house and came back with a plastic bowl and lid. “Will this work?”

“It’s perfect,” said Lakeesha. The two girls scraped some snow from the bottom of the snowfriend and shaped it into a solid ball. Then they placed the ball into the bowl and put the lid on.
"Now let's put the bowl with the snowball into the freezer. We can keep it frozen solid until next year and use it to start our next snowfriend." The two girls giggled and ran inside.
You have seen what happens when you pour oil into a cup of water. The oil spreads out on top of the water, and it floats. But what do you think would happen if millions of gallons of oil were poured into the ocean? You would have an oil spill. And you would also have a big cleanup job!
Oil can be spilled by oil tankers. These are ships that carry oil that will be used for fuel. Sometimes the oil tankers get into accidents, and the ship's tanks are ripped open.

Oil gushes out from the tank in a thick, black blanket. The oil floats on the water and spreads out. Because the water is cold, the oil usually gets more viscous—like honey that has been in the refrigerator.

Large spills kill many animals and plants. Animals are poisoned if they eat food that is covered with oil. They also get sick when they lick oil off their fur or feathers. Others drown because they can't fly or swim when they are covered with oil. Sometimes animals freeze to death because oily fur and feathers can't keep them warm.

Rescuing animals covered with oil is hard work. Rescue workers wipe oil from around the eyes and beaks of seabirds. They give seals and other animals baths with gentle soap. Imagine how hard it is to give a bath to a seal!
People are still trying to figure out the best ways to clean up oil spills. What works well in one place might not work as well in another place. Everyone agrees, though, that what's most important is to act quickly. First you have to try to trap the oil, and then you have to decide how to clean it up.

One way to trap the oil is to use a kind of huge floating fence called a **boom**. Cleanup workers then use a giant vacuum cleaner to suck up the oil that's floating on the water. They might also float pads on the oil. Just like a sponge soaks up water, these pads soak up oil.

But what if the oil can't be trapped? If nothing more is done, wind and waves may mix the water with the oil, just like you did when you mixed the oil and water in science class. The oil breaks into tiny drops that spread out into the water.

Cleanup workers may spray soapy chemicals on the spill. These chemicals break up the oil into little drops. This is like what happens when you use soap to wash oil off your hands.

Sometimes the workers set larger spills on fire to burn up the oil. This works well, but it can lead to other problems. For example, the smoke may pollute the air, and the ashes pollute the water.
Cleaning up oil that reaches the shore is the hardest job of all. The oil covers everything with a sticky, slimy blanket that may harden like road tar. Sometimes workers spray hot water on the shore. Hot water makes the oil less viscous, so it will rinse off. Unfortunately, this puts oil back into the water. The hot water may also harm animals and plants living on the shore.

Finally, scientists are experimenting with bacteria that eat up oil. Bacteria are very small organisms that you can't even see. This new cleanup method is very exciting because it does not appear to harm plants or animals.

What's the best solution to the oil-spill problem? It's to stop the spills before they happen. Have you ever seen a puddle of water with shiny rainbows in the middle of your street? That's an oil spill! These "slicks" are usually caused by oil that has leaked from cars or lawn mowers. Rain washes these spills into bays and lakes, where they pollute the water. This "small" kind of oil pollution is the most common and does the most harm. These spills occur every day in places all over the world.

What can you do to prevent oil spills? You can ask adults to be careful with gas and motor oil. You can also conserve energy. Much of the energy we use to heat our homes and schools comes from oil. The less energy we use, the less oil we'll need.

And the fewer oil spills there will be!