

TEAM MEETING GUIDE



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Introduction to *FIRST*[®] LEGO[®] League Discover

In *FIRST*[®] LEGO[®] League Discover, children are introduced to the fundamentals of STEM while working together to solve fun challenges and building models using LEGO[®] DUPLO[®] bricks. Students gain habits of learning, confidence, and teamwork skills along the way.

FIRST LEGO League Discover is one of three divisions by age group of the *FIRST* LEGO League program and serves the youngest children. This program inspires young people to experiment and grow their confidence, critical thinking, and design skills through hands-on STEM learning. *FIRST* LEGO League was created through an alliance between *FIRST*[®] and LEGO[®] Education.



Welcome to **CARGO CONNECT**SM

Welcome to the *FIRST*[®] FORWARDSM season. This year's *FIRST* LEGO League Discover Challenge is called **CARGO CONNECT**SM. Children will learn about how packages are transported, sorted, and delivered to their destinations. See page [5](#) for a description of the **CARGO CONNECT**SM Challenge that you can share with your children. A scaled-up version of this story can also be found on the mat.

Children will think and behave like designers and engineers, developing their ability to observe, question, gather information, and ask more questions.

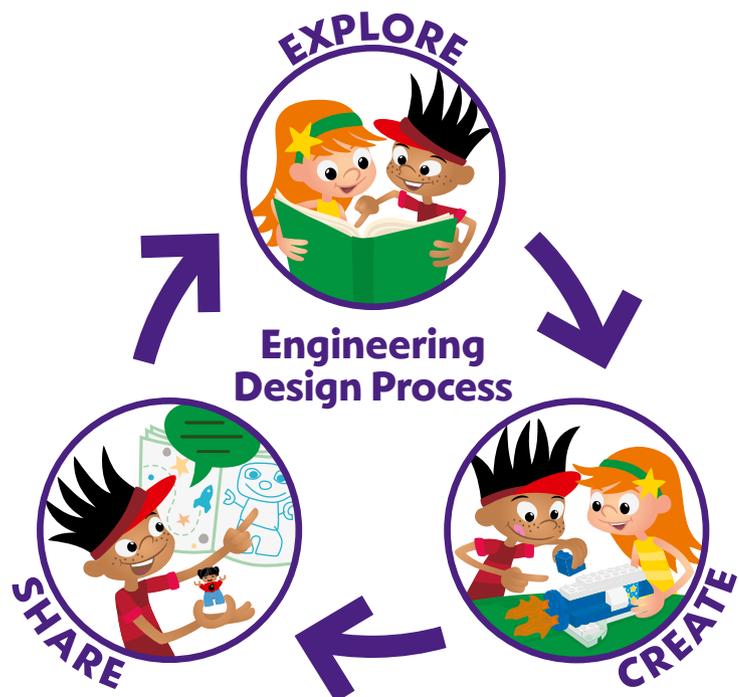
During each session, they will experience the engineering design process. There is no set order for this process, and they may go through each part several times in a single session. This means that during a

session, children will be exploring the theme and ideas, creating solutions, testing them, iterating and changing them, and then sharing what they've learned with others.

Working in Teams

Children work together in teams of four using pieces from STEAM Park by LEGO[®] Education and a **CARGO CONNECT** Discover set. They will collaborate and communicate to build, learn, and play together.

Children should be encouraged in every session to work with their teammates, listen to each other, take turns, and share ideas and pieces.



Challenge Story

Let's think of ideas for different ways to transport packages.



Let's explore how packages are transported to places all over the world.



Now we will create a team model showing how packages are sorted and transported to their destinations.



Share your ideas, team model, and what your team has learned with others.



Playful Learning in Action

Research shows that when young children are engaged in playful STEM experiences, they ignite their natural curiosity, grow their knowledge, and develop habits of learning. When educators nurture these natural-born scientists, they build a bridge between the real world, STEM skills, and literacy.



Habits of Learning

In *FIRST*® LEGO® League Discover, children are given meaningful problems to solve. They work together to wonder and question, build and tinker, listen and share. By the end of their experience, children emerge more confident and better equipped to face future challenges, and they have discovered the joy of learning.

It is important the children have fun. The more playful the sessions are, the more motivated and excited they will be. We want them to build, tinker, and rebuild. Don't worry if you don't know all the answers, and remember, there is no such thing as failure! If something goes wrong, you learn from it and try again.



Playful Learning in Action

FIRST® Core Values

The FIRST® Core Values are the cornerstones of the program. They are among the fundamental elements of FIRST® LEGO® League.

By embracing the Core Values, children use discovery and exploration of the theme in each session and learn that helping one another is the

foundation of teamwork. It is important that the children have fun. The more playful the sessions are, the more motivated the children will be.



Teamwork

The children discovered they were stronger when they worked together.



Innovation

We used creativity and persistence to solve problems.



Fun

We saw the children enjoying and celebrating what they did!



Discovery

We explored new skills and ideas.



Inclusion

We respected each other and embraced our differences.



Impact

We applied what we learned to improve our world.

Early STEM Skills

Children will develop early STEM skills including:

- Science: cause and effect, gravity, force, motion, and simple machines
- Technology: tools and investigating how things work
- Engineering: creating designs, building solutions, and solving problems
- Math: abstract and quantitative reasoning, attributes of objects, and shape identification

What Do You Need?

Engineering Notebooks (per child)

You will receive a set of CARGO CONNECTSM *Engineering Notebooks*, which provide a place for children to record their ideas and sketches as

they progress through their journey. There is one page to fill in for every other session. Provide one notebook to each child.

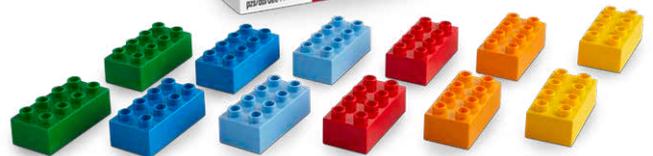


Discover More Set (per child)

The Discover More set is designed for children to take home. Use the accompanying letter (available at firstlegoleague.org/discovermore) to engage the whole family in playful, relevant activities. The set includes two sets of Six Bricks for an adult and child to participate in the activities together.

Further information can be found in the Six Bricks Booklet to support the understanding and facilitation of these activities.

legofoundation.com/en/learn-how/knowledge-base/six-bricks-booklet/



LEGO® Education STEAM Park Set (serves 6-8 children)

Each team should have access to pieces from the STEAM Park set. All teams will use the STEAM Park set to explore STEM concepts and form the basis of their team model.

There will also be problems throughout the sessions, as well as at the celebration event, that can be explored and solved using the set's many colorful, easy-to-operate functional pieces.

The *STEAM Park Teacher Guide* can be found on the LEGO® Education website, alongside other ideas and inspiration.

education.lego.com/en-us/product-resources/steam-park/teacher-resources/teacher-guide-pdfs

The teacher guide introduces the set, as well as learning grids and additional activities. We suggest pre-teaching the following sessions from the teacher guide if class is new or students are new to STEAM Park:

1. Functional Elements
2. Welcome to STEAM Park
3. Gears



Tip

STEAM Park comes in a cardboard box. You could store STEAM Park in a plastic storage tub, which might be better with frequent use.

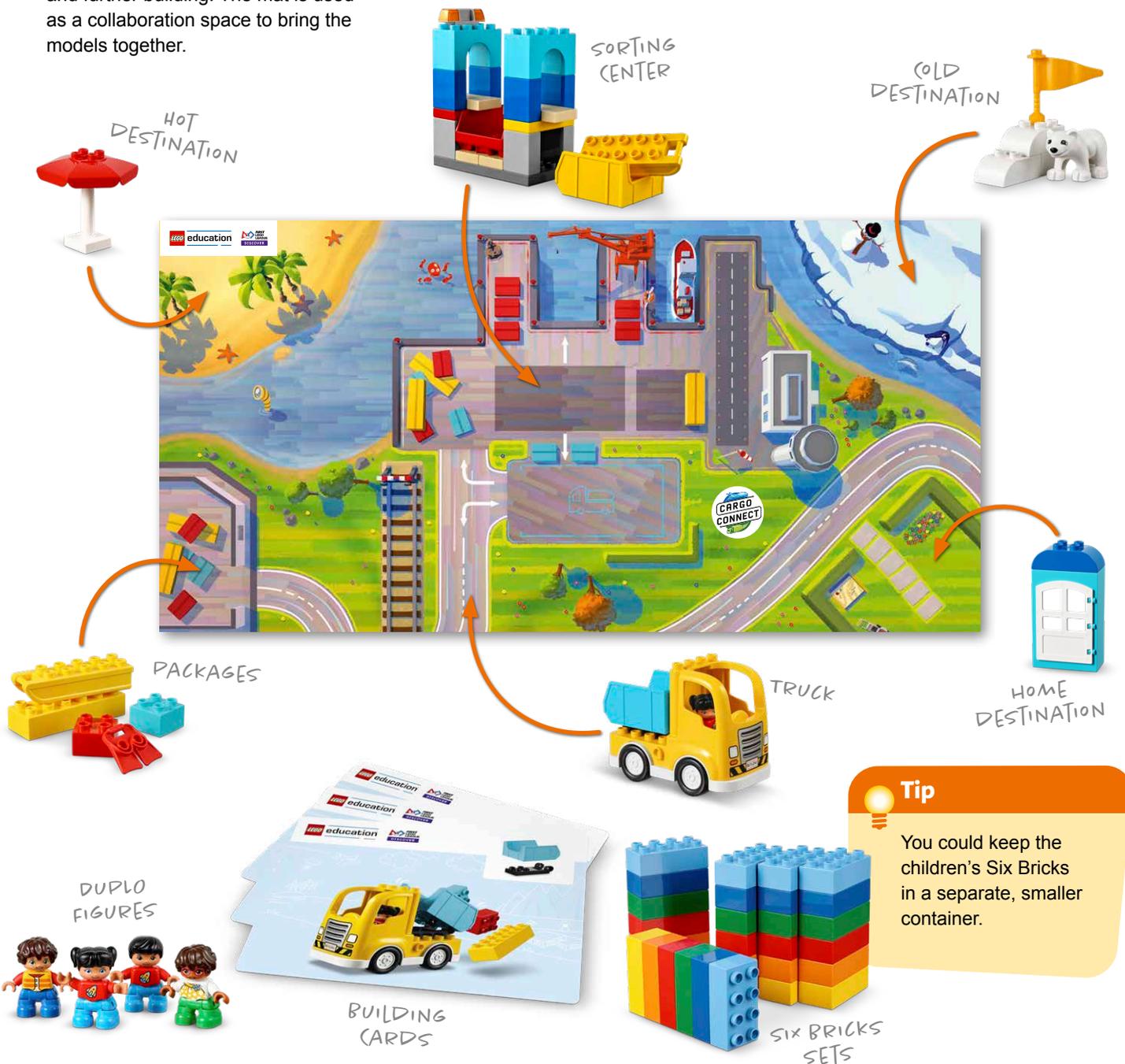
What Do You Need?

Discover Set (serves up to 4 children)

The Discover set consists of the CARGO CONNECTSM Discover model (truck, packages, sorting center, and destinations), LEGO[®] DUPLO[®] figures, Six Bricks sets, mat, and building cards.

The Discover model is intended to help children connect to the theme and provide a starting point for discussions and further building. The mat is used as a collaboration space to bring the models together.

Each Discover set includes five sets of Six Bricks for use in the classroom. There are enough sets to give one to each child, plus one for the teacher. Each child will need one of each of the six colored bricks. The Six Bricks in this set are in addition to the Six Bricks in the Discover More set that goes home.



Tip
You could keep the children's Six Bricks in a separate, smaller container.

How Do I Support Parents and Guardians?

How Should I Communicate This to Parents and Guardians?

We have provided a letter that you can send home to the adults along with the Discover More set. Each child should take home one Discover More set, which contains two sets of Six Bricks.

The teachers and support staff are the best people to understand how to communicate with the parents and guardians at home. A variety of

other ways (letter, video, website, social media) to communicate this information can be explored.

If you are implementing outside of a school, such as in a library, we encourage you to partner with schools to help communicate and distribute sets and letters to homes.



How Will the Parents and Guardians Know What to Do?

The letter gives a broad overview of *FIRST*® LEGO® League Discover and the habits of learning it develops. Each activity is explained to help the adult get started and talk with their child. We encourage all schools to hold a class meeting before starting the sessions, in which the parents and guardians can hear more, see the brick sets, and receive their Discover More sets.

This meeting could cover:

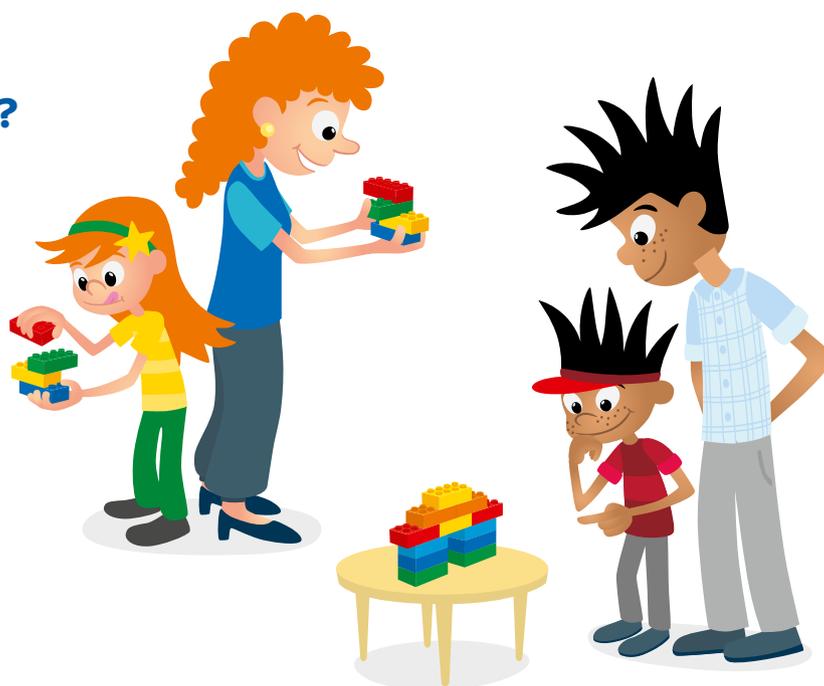
- What *FIRST* LEGO League Discover is
- What the habits of learning are
- What the Core Values are
- The celebration event at the end of the experience
- The opportunities provided by their experience
- The Discover More set and how to support children at home

Find the parent letter here:

firstlegoleague.org/discovermore.

How Should I Follow Up on the Discover More Activities?

It is important to follow up on the activities that children do at home. Spend a few moments talking with the children about what they did and if they had fun playing at home. Simply recognizing that these activities have been done helps to build a bridge between home and school and the learning that takes place in both. Encourage them to try other Six Bricks activities, always with the emphasis on both the adult and child having fun.





WHAT IS THE CELEBRATION

At the end of their experience, all teams should participate in a celebration event ([Session 10](#)). The children will love sharing with others what they have built and learned. It could be held in your usual session meeting space, a classroom, a library, or anywhere else that has appropriate room for the teams to spread out, build, and have fun.

EVENT

BEFORE THE EVENT:

- Choose a good space.
- Invite families, caregivers, teachers, and friends.
- Find volunteer reviewers.
- Print reviewing questions ([page 24](#)) and [certificates](#).
- Read through the celebration event session information.

DURING THE EVENT:

- Lay out the mats so two teams can work together.
- Assign at least one reviewer with each pair of teams.
- Get the kids excited for the final challenge.
- Ensure the reviewers talk with the children.
- Hand out certificates at the end.
- Have fun and celebrate children's achievements.

AFTER THE EVENT:

- Teach the other STEAM Park lessons.
- Continue to teach other STEM activities related to the theme.
- Find opportunities to use the vocabulary learned through the experience.
- Have the children use their teamwork skills in other sessions.

Tip

See pages [23-24](#) for more details on the event day.

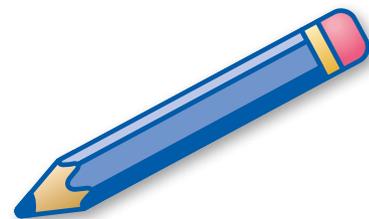


Pre-Session Checkpoint

Please read the student *Engineering Notebook* and this *Team Meeting Guide* before starting the sessions. They are full of very useful information to guide you through the sessions.

After completing the sessions, have the children participate in an event to celebrate their achievements.

Use this checkpoint to help you get started and guide you toward success.



- Ensure you have received all materials needed to implement *FIRST*® LEGO® League Discover. See pages [8-9](#) for what you need.
- Identify the space where you will complete the sessions and store materials between the sessions. Or a place to keep assembled builds between sessions if desired.
- Think about the final celebration event. Will you have it in your classroom and invite the children's families? The celebration event is outlined on page [11](#) with details on pages [23-24](#).
- Create a plan. How often during the week will you do it? Will you complete a whole session at once or split the tasks across different times?
- Determine how you will place the children into teams. The recommended team size is four children.
- Be sure the STEAM Park sets are unpacked and organized before starting Session 1. You may want to place the pieces into durable plastic storage bins.
- Get your children familiar with STEAM Park. Try the lessons noted on page [8](#).
- Encourage family and home engagement. See page [10](#) for more details.
- Send the Discover More sets home with the children with the parent letter.

Helpful Resources

LEGO® Education Support education.lego.com/en-us/support
Phone: (800) 422-5346

Main Website firstlegoleague.org/

General Support Questions flldiscover@firstinspires.org

Equity, Diversity, & Inclusion Training firstinspires.org/about/diversityinclusion

LEGO Education Teacher Community community.lego.education.com

CARGO CONNECTSM Resources firstlegoleague.org/season

Educator Resources info.firstinspires.org/curriculum

Hybrid Learning education.lego.com/en-us/managing-todays-classroom# covid-19-resources
firstinspires.org/covid-19

Find additional digital resources here!

Session Layout

	Warm-Up (Six Bricks)	Task 1 (Explore)	Task 2 (Create)	Task 3 (Share)
Session 1 Let's Discover	Discover Six Bricks I	Transportation	Explore STEAM Park	Share Prompt
Session 2 Let's Deliver	Discover Six Bricks II	Challenge	Trucks and Vehicles	Engineering Notebook Page
Session 3 Let's Transport	What Can You Build?	Mat Overview	Load and Unload Packages	Share Prompt
Session 4 Let's Sort	Cargo Space	Mat Features	Sort Packages	Engineering Notebook Page
Session 5 Let's Innovate	Cargo Train	Mat Areas	Innovate with Moving Parts	Share Prompt
Session 6 Let's Explore Jobs	Moving Packages	Transportation Jobs	Jobs, Tools, and Equipment	Engineering Notebook Page
Session 7 Let's Use Ramps	Build the Picture	Ramps and Vehicles	Ramps and Vehicles	Share Prompt
Session 8 Let's Improve	Air and Water	Transportation Needs	Improve Package Journey	Engineering Notebook Page
Session 9 Let's Connect	Build a Bridge	Reflection	Combine Ideas	Share Prompt
Session 10 Let's Celebrate	Final Celebration Event!			

Session 1: Let's Discover

As you go through these sessions, don't worry if you don't know all the answers – and remember, there is no such thing as failure! Also for the children, know that they will make mistakes and iterate on their designs.

EACH SESSION PROVIDES A DEEPER CONNECTION TO SUPPORT YOU AND YOUR TEACHING.

EACH SESSION HAS A BIG QUESTION THAT CAN BE SHARED TO FRAME THE SESSION.

What can we build with STEAM Park related to transportation?

Six Bricks Warm-Up (15 minutes)

Discover Six Bricks I (see Appendix for full activity)

The children will use the Six Bricks both in the classroom and at home with the Discover More set to learn new skills and explore new ideas. 

Task 1 (10 minutes)

Introduce the theme of transportation. Have a discussion on these questions to start the session and explore the children's understanding. Recognize times in the school day when the children engage in transportation activities.

To encourage language use, you could ask them:

- What is **transportation**?
- What is a **destination**?
- How are people and things transported?

Task 2 (25 minutes)

Have the children build using the different pieces in STEAM Park. Encourage them to play freely and build anything they want, using their imaginations and discovering the pieces' **functions**. Help them identify pieces that could relate to transportation and vehicles.

Task 3 (10 minutes)

Have the children share and explain what they built and how the pieces they identified relate to transportation. All the children's builds will be correct, and there is no one right answer to these sessions.

Outcomes

The children will play with STEAM Park, building creatively and trying new things.

The children will identify LEGO® elements that relate to transportation.

Tips

-  Send home the letter (see page 10) with the Discover More set with each child.
-  Check out the [Functional Elements](https://education.lego.com/en-us/lessons?grades=PreK-K) lesson (education.lego.com/en-us/lessons?grades=PreK-K) for examples.



Key Vocabulary

destination, function, transportation

Playful Learning in Action

The children will use **discovery** to explore new ideas with STEAM Park. They will **wonder** and **question** what the pieces do.



Session 2: Let's Deliver

Look at the three discussion points in Task 1 and see how they gradually require more complex input from the children as they answer. Find ways to include different levels of questioning in all activities that lead children on their learning paths.

Outcomes

Teams will be able to describe parts of the transportation journey including where and how packages are delivered.

The children will document their ideas and designs in their *Engineering Notebooks*.

How does a package get to our front door?

Six Bricks Warm-Up (10 minutes)

Discover Six Bricks II (see Appendix for full activity)

Task 1 (10 minutes)

Explain *FIRST*® LEGO® League Discover to the children. Tell them they will explore the **journey** of packages from start to finish. Read the Challenge Story to the children. 

You could ask the children to:

- Name different places where **packages** are delivered in their town.
- Describe different **forms** of transportation (car, truck, airplane, boat) and pick their favorite one.
- Give examples of different ways (such as land, sea, air) packages are transported.

Task 2 (25 minutes)

Have each team build the truck from the Discover set, using the building card. Then, they can build more wheeled vehicles using STEAM Park. As with Session 1, encourage them to build freely, using their creativity and imagination to create new amazing vehicles. 

Task 3 (15 minutes)

In their *Engineering Notebooks*, have the children write or draw a picture of their favorite form of transportation.

The children could include the name of their form of transportation and a description (such as use, action, colors, packages transported). The children could also share and describe the vehicles they built.

Tips

 The Challenge Story is found in the *Engineering Notebook* and on the mat.

 Building cards in the Discover Set provide visual instructions to make the different parts of the Discover model.



Key Vocabulary

form, journey, packages

Playful Learning in Action

Teams will apply **teamwork** and **discovery** to explore the challenge.



Session 3: Let's Transport

This session introduces problem-solving tasks. Problem-solving is a habit of learning the children should practice. Encourage the teams to persevere in the creation of their solutions. Then the teams can communicate and share their solutions with others.

Outcomes

Teams will explore the how cargo is transported from place to place and what connections are used.

Teams will build a way to load and unload packages.

How are packages loaded, transported, and then unloaded at the sorting center?

Six Bricks Warm-Up (10 minutes)

What Can You Build? (see Appendix for full activity)

Task 1 (10 minutes)

Have each team unfold their CARGO CONNECTSM mat and look at it. Talk about what things they can see. Point to different locations on the mat.

You could ask the teams:

- Where do packages get loaded onto the truck at the start of the journey and where are they unloaded at the sorting center?
- How does the truck get the **cargo** (packages in transport) from the starting point to the unloading point at the sorting center (e.g., roads)?

Imagine what types of products are inside the packages.

Task 2 (25 minutes)

Have each team build the sort center and truck from the Discover set. Then, they can use STEAM Park to build roads and bridges to get packages from the starting point on the mat to the sorting center. Challenge the teams to build ways to **load** packages into the truck and **unload** them at the sorting center. 

Task 3 (15 minutes)

Have the teams share their solutions to Task 2 on the mat. They could include LEGO[®] DUPLO[®] figures and show how the truck gets to the sorting center and the loading and unloading of packages.

Tips

 Children may be inspired to create their own designs different than what's on the building cards.

 Encourage the teams to take turns acting out loading, unloading, and delivering packages on the mat.



Key Vocabulary

cargo, load, unload

Playful Learning in Action

Teams will use **teamwork** and **problem-solving** to build their solutions.



Session 4: Let's Sort

Provide real-world examples, including photos and videos, when introducing the tasks. Set expectations for use of voice when sharing ideas. Expect a noisier classroom. As a facilitator, check that the children are engaged and on task.

Outcomes

Teams will sort packages in the sorting center.

Teams will create different forms of transportation to deliver packages to their destinations.

How are packages transported from the sorting center to different destinations?

Six Bricks Warm-Up (10 minutes)

Cargo Space (see Appendix for full activity)

Task 1 (10 minutes)

Have each team unfold their CARGO CONNECTSM mat. Look at the different features and places on the mat. You could connect this to what types of packages are delivered to the school.

You could ask the teams:

- What different destinations are on the mat?
- Is there delivery **access** from the **sorting center** to the destinations?
- What forms of transportation are needed to transport packages from the sorting center to different destinations?

Task 2 (25 minutes)

Have each team find the packages, sorting center, and destination pieces in the Discover set. They should build the destinations and sorting center, using the build cards for inspiration. Then, they should **sort** all the packages in the sorting center by their destination color. Red packages go to the hot destination, blue packages to the front door, and yellow packages to the cold destination.

Challenge the teams to build the different vehicles needed to transport packages to their destinations. 

Task 3 (15 minutes)

In their *Engineering Notebooks*, have the children write or draw a picture of how packages get from the sorting center to their destinations.

Tips

 Each child on the team can be given a destination for which they can sort packages and build a transportation solution.

 Teams can identify what kinds of products are in the packages.



Key Vocabulary

access, sort, sorting center

Playful Learning in Action

The children will **listen and empathize** about each other's ideas. The team will listen to everyone's ideas, demonstrating **inclusion**.



Session 5: Let's Innovate

Take what the teams have learned and challenge them one stage further. Take notice in this session how they can apply prior knowledge of the functional elements in STEAM Park. Check out the [Functional Elements](https://education.lego.com/en-us/lessons?grades=PreK-K) lesson (located at education.lego.com/en-us/lessons?grades=PreK-K) for more guidance.

Outcomes

Teams will use imagination and creativity to create innovative vehicle designs.

Teams will apply knowledge of functional pieces to create vehicles with moving parts.

How can we use a moving part in our vehicle design?

Six Bricks Warm-Up (10 minutes)

Cargo Train (see Appendix for full activity)

Task 1 (10 minutes)

Have each team unfold their CARGO CONNECTSM mat. Identify the different areas (e.g., island, sea, river, ice). 

You could ask the teams:

- What different types of **vehicles** can be used to transport packages?
- How could you create **innovative** vehicles to reach the different areas on the mat?

Task 2 (25 minutes)

Have each team pick out the **functional** pieces in STEAM Park and show how they move. They should use them to build vehicles with moving parts to transport packages by land, water, or air. Imaginative vehicles should be encouraged (e.g., a train that can float when it needs to cross water).

The vehicles could go from the sorting center to the destinations. The task can be done with just the mat, but teams could include the Sorting Center and Destinations from their Discover sets.

Task 3 (15 minutes)

Have the teams describe the movement in their builds. They can demonstrate their vehicles going from the sorting center to their destinations. Ask them to use the word *innovative* where possible.

Tips

-  The children could identify what areas they have in their community.
-  Each child on the team could be assigned land, water, or air for which to build a vehicle solution.



Key Vocabulary

functional, innovative, vehicle

Playful Learning in Action

Teams will **apply knowledge** from previous sessions and use **innovation** to creatively build vehicles with moving parts.



Example models that a child might build

Session 6: Let's Explore Jobs

Provide real-world examples, including photos and videos of people in transportation jobs and their tools and vehicles. You could connect this to your social studies/global studies lessons on community helpers.

Outcomes

Teams will identify different jobs involved in transporting packages.

Teams will create the vehicles and tools used by people in transportation jobs.

What people help transport packages, and what tools do they use?

Six Bricks Warm-Up (10 minutes)

Moving Packages (see Appendix for full activity)

Task 1 (10 minutes)

Have some children act out (mime) the different transportation jobs and select others to guess what they are miming. Then repeat, swapping the children miming and guessing. 

You could ask the children:

- What different **jobs** do people transporting packages have?
- Who transports packages in your **community**?
- What **tools** do these people use in their transportation jobs?
- What types of unique vehicles do people use to transport packages?

Task 2 (25 minutes)

Have teams create the tools and equipment that people use in their jobs when they oversee transporting and delivering packages. Encourage the creation of unique vehicles (e.g., forklifts, drones, lifters, robot delivery devices). The teams could use pieces from the Discover set and STEAM Park and use the various LEGO® DUPLO® figures to represent different transportation workers.

Task 3 (15 minutes)

In their *Engineering Notebooks*, have the children write or draw a picture of a person whose job is to transport packages. They could include the form of transportation, tools used in that job, and how that person helps their community.

Tips

 The children could act out the different jobs and what each person does to help the package get transported.

 Giving examples of unique transportation vehicles could help teams identify different jobs.



Key Vocabulary

community, job, tool

Core Values Connection

Using **teamwork**, the team will think about the **impact** of different transportation jobs in their communities.



Session 7: Let's Use Ramps

Think about how the STEM content is explored in this lesson. See how specific science concepts are integrated into the problem-solving tasks. When the children ask a question, prompt them with a question back to guide their learning instead of giving them the answer.

Outcomes

Teams will design vehicles that can safely transport packages.

Teams will explore speed and gravity when testing their vehicles on the ramps.

How can we use ramps to help us transport packages quickly and safely?

Six Bricks Warm-Up (10 minutes)

Build the Picture (see Appendix for full activity)

Task 1 (10 minutes)

Show the children photos or videos of vehicles using ramps.

You could ask the children:

- What is the purpose of **ramps**?
- Where are ramps in our community and what purpose do they serve?
- How does it feel when you go down a hill (e.g., running, rolling, sledding)? How does this relate to a car going down a ramp?

Task 2 (25 minutes)

Build the inclined track (ramp) from the [Ramps](https://education.lego.com/en-us/lessons?grades=PreK-K) lesson (located at <https://education.lego.com/en-us/lessons?grades=PreK-K>) in the *STEAM Park Teacher Guide*. You could provide the teams with an object they need transport as cargo, such as an egg, plastic ball, or other suitable object. 

Have teams:

- Use the ramps and other pieces to create paths from the Sorting Center to different Destinations on the mat.
- Build different vehicle designs from STEAM Park that can safely transport packages.
- Test the different vehicles going down the ramps with big and small cargo to explore the effects of **gravity** and **speed**. 

Task 3 (15 minutes)

Have the teams show their cars going down the ramps. Ask students what would the car need to go up the ramp. Have them talk about what makes certain vehicles go farther or faster than others. Encourage them to use the words *gravity* and *speed* when possible.

Tips

-  You could have the ramps already assembled to allow children to focus on vehicle designs.
-  The Discover set Truck does not fit on the ramp, so teams will need to build their own vehicles.



Key Vocabulary

gravity, ramp, speed

Playful Learning in Action

Teams will have **fun** building and testing their vehicles on the ramp. They will use **communication** to share their ideas and designs.



Example models that a child might build

Session 8: Let's Improve

This session is entirely devoted to iterating and improving ideas. Encourage children to focus on what they're creating instead of putting limits on what they build.

Outcomes

Teams will determine how to transport packages more efficiently.

Teams will build their improved solution to the transportation journey of packages.

How do we improve how packages are transported to their destinations?

Six Bricks Warm-Up (10 minutes)

Air and Water (see Appendix for full activity)

Task 1 (10 minutes)

Tell the teams they will build on and improve their solutions from previous sessions. They could think about the different people in their town and what transportation needs they have. Examples include faster **deliveries**, less energy used, or safer transportation of cargo.

You could ask the children:

- How could you make the transportation of packages more **efficient**?
- What would you change and **improve** on your previous ideas?
- How could a more efficient solution help others?

Task 2 (25 minutes)

Have teams build their new and improved transportation journey from where packages start to where they are delivered at their destinations. They could improve upon an idea or design they've used in a previous session. Their build could be a vehicle, new path, or other part of the journey. The teams could use pieces from the Discover set and STEAM Park.

Task 3 (15 minutes)

In their *Engineering Notebooks*, have the children write or draw their ideas for transporting packages more efficiently. The children could draw a map showing all the different stops of the packages and how they improved how packages are transported.

Tips

 Teams are improving their ideas, not necessarily their actual models from past sessions.

 Teams could identify additional pieces in STEAM Park to sort as packages.



Key Vocabulary

delivery, efficient, improve

Playful Learning in Action

Teams create solutions while considering the **impact** on their town. By improving their designs, children will show **confidence** in their ability to build and iterate.



Session 9: Let's Connect

It is time to reinforce the use of teamwork skills such as sharing, discussing, and compromising. Observe how the teams talk to each other and evaluate how this has changed over the course of the sessions.

Outcomes

The teams will apply knowledge and experience from the previous sessions to solve a problem.

The teams will work together to combine ideas to create a cohesive solution.

How can we combine ideas together to make one working solution?

Six Bricks Warm-Up (10 minutes)

Build a Bridge (see Appendix for full activity)

Task 1 (10 minutes)

Ask the children to **reflect** on their experiences throughout the sessions.

You could ask the children to:

- Describe the whole transportation journey of packages.
- Reflect on their favorite solution from previous sessions and explain why.
- Explain how they have worked together previously to **combine** ideas.

Task 2 (25 minutes)

Before building, have teams decide who will build each part. They will then build the whole transportation journey of the different packages, with each child building part of that journey. When each child has built their own part, or partway through the task, have each team combine all their parts into one solution.

Encourage teams to look at each part that has been built and what it does. They should find creative ways to connect each part together. They can **iterate** on their designs to combine each other's builds. Have them discuss who will say what about their solution in Task 3.

Task 3 (15 minutes)

Have the children share what they have built. Focus on how the teams combined their ideas to create the final solution. Have teams reflect on which ideas they chose, why, and how they worked together in this session.

Tips

 Encourage children to think about and choose the best idea they had in the previous sessions.

 It is important for teams to work together to combine their ideas into a cohesive solution.



Key Vocabulary

combine, iterate, reflect

Playful Learning in Action

The teams will **persist** to create a team build and use **teamwork** to join their builds together.



Session 10: Let's Celebrate

Preparing the Teams (10 minutes)

Welcome the children to the event and tell them what they will do during the session. They will use their ideas to build their team model together, share their *Engineering Notebooks*, and solve a special challenge. But most of all, they are there to work with their friends, build creative models, and have fun! The children can complete the Session 10 *Engineering Notebook* page to provide direction on what to share with the reviewers.

Final Challenge (20 minutes)

At the event, have the teams:

- Build their team model of the entire transportation journey.
- Include the Sorting Center and mat from the Discover set.
- Use STEAM Park pieces to make something move.

Special Challenge (10 minutes)

Match up two teams. Have the two teams solve the special challenge together:

You could ask the children to:

- Transport packages between the two team models using functional pieces from STEAM Park.
- Create connections like roads and ramps between the two team models.

Reviewing the Teams (during the event)

The reviewers should visit the teams during the challenge, talking with them, asking questions and seeing their *Engineering Notebooks*. Encourage the adults to interact with the children. They should ask about what the teams have done throughout their sessions.

Celebrate (10+ minutes)

While the building, problem-solving, and reviewing are the most important part of how the event works, you should allow plenty of time to celebrate each team's achievements in front of everyone at the event. You could extend this time and allow time for the children to share and present what they learned.

Tips

-  It is important teams can relate what they do at the event to the sessions they have completed and also how the sessions have prepared them for these challenges.
-  If possible, assign at least one adult (a parent or helper) to each pair of teams. They can help the teams stay on task and talk with them. The reviewers will decide on awards for each team. Reviewing questions are on page [24](#).
-  For the celebration, print out enough [certificates](#) for each child. Have the children come up one at a time, or in their team, to be recognized and applauded. A great *FIRST*® LEGO® League Discover event always ends in a celebration.



Reviewing Questions

These questions are designed for adults to start conversations with the children at the celebration event.

Reviewers could ask the teams:

Final Challenge

Tell me about...

- Your design and build.
- Why you built it that way.
- What you included in your transportation journey.
- How you made transporting packages better.
- How you decided what you wanted to build.
- How it works.
- The STEAM Park pieces you used to make something move.

Special Challenge

Tell me about...

- How you solved the special challenge.
- How you decided how to connect your team models together.
- What you built to connect the two team models.

Working as a Team

Tell me about...

- How you worked together.
- The job do you had on your team.
- How you shared ideas in your team.
- How you worked as a team.



Awards

Every team should win an award, and more than one team can win the same award.

Choose from this list of official Discover awards:

- Cooperative Builders
- Super Problem-Solvers
- Expert Explainers
- Creative Designers
- Amazing Inventors

For individual certificates for each award, please go to the Discover section:

firstlegoleague.org/season.



Six Bricks Activities

In addition to the Six Bricks activities listed in this *Team Meeting Guide*, you can find more activities here: legofoundation.com/en/learn-how/

knowledge-base/six-bricks-booklet/. Some of these Six Bricks activities are modified versions of activities provided in the link.

Discover Six Bricks I

Base Activity

1. Each child separates his or her bricks and spreads them out.
2. With closed eyes, they shuffle their bricks around.
3. Keeping their eyes closed, each child picks any brick and holds it up high.
4. Now they open their eyes and see what color they hold.

Part 2

5. Let them pick any brick, look at it carefully, and turn it around and over in their hands.

Guiding Questions:

- *What color brick do you have?*
- *Can you name all the different colors?*
- *Can you sort the bricks into warm and cold colors?*
- *Can you create a rainbow with your bricks?*
- *What color is your brick? How does it feel (rough, smooth, hard, soft, shiny, dull, etc.)?*
- *What spaces and shapes can you see on your brick? How many studs does each brick have?*

Children learn to:

- Play and become familiar with the bricks.
- Listen and respond to questions.
- Use descriptive language.



Discover Six Bricks II

Base Activity

1. Children lay out their bricks in any order (see the picture).
2. Then they put a finger on the red brick and move it left.
3. They turn the dark blue brick upside down (or on its side).
4. Children click the green brick on the red and cover all studs.

Vary the instructions you give such as colors, moving bricks left/right, and positions.

Guiding Questions:

- *How did you keep attention (encourage some of the children to explain in turn)?*
- *How can we make this activity harder? (Give more instructions, say them faster...?)*

Children learn to:

- Use spatial skills to orient themselves.
- Keep attention and resist distraction.
- Initiate activities.



Six Bricks Activities

What Can You Build?

Base Activity

1. Children use their six bricks to build a car or truck to transport packages.
2. Then they take turns to describe their vehicle.
3. Then have them create characters that are operating their vehicles.

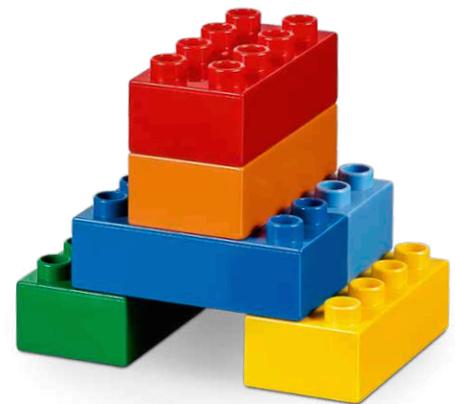
This activity can also be linked to a theme, story, or book and could be done in pairs.

Guiding Questions:

- *Does it have a name?*
- *What sound does it make?*
- *How does it move?*
- *Does it have a magic power?*
- *Do you have any questions to ask your friends about their model?*

Children learn to:

- Invent and describe characters (for stories).
- Come up with stories in groups.
- Ask questions and suggest answers.



Cargo Space

Base Activity

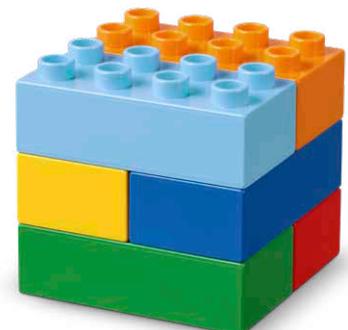
1. Children identify what package each color of their six bricks represents.
2. Then have them brainstorm the best way to combine the packages to take up the least amount of space in a cargo container.
3. Have them share their designs with each other.
4. Then have them to build a cube (of packages) with six bricks so it does not fall apart (see picture for an example).

Guiding Questions:

- *What packages did each brick represent?*
- *What initial design did you have for your packages in the cargo container?*
- *How much space would the cube take up in the cargo container compared to your initial design?*

Children learn to:

- Brainstorm ideas.
- Enjoy solving problems.
- Engage in collaborative tasks with peers.



Six Bricks Activities

Cargo Train

Base Activity

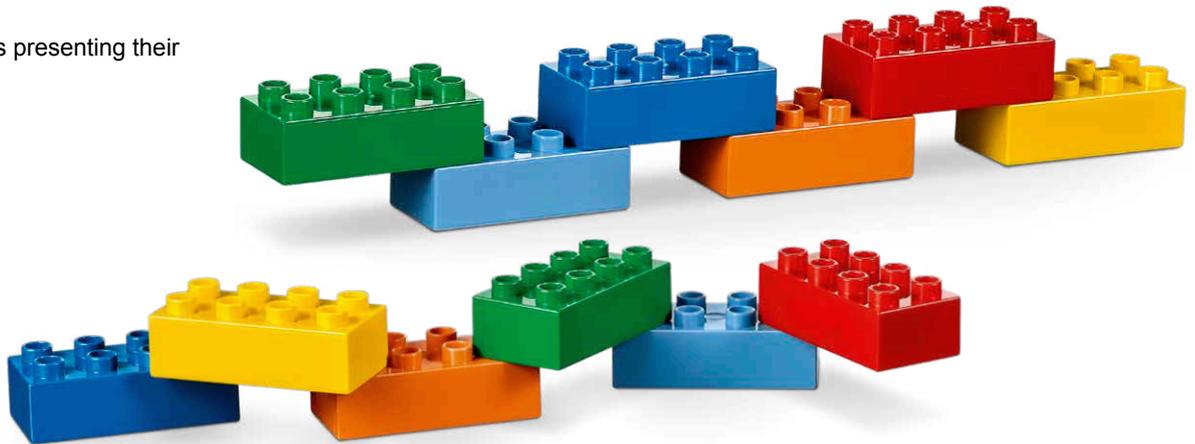
1. In pairs, children mix their bricks to build a train.
2. The children should think about where their train will travel to and what cargo it will transport.
3. Allow the pairs time to prepare what to present.
4. The pairs take turns presenting their trains.

Guiding Questions:

- *How can you show movement, colors, or patterns in your train?*
- *How can you present your train to the others?*
- *What cargo will your train transport?*
- *Where will your train go?*

Children learn to:

- Use strategies learned earlier (patterns).
- Negotiate when and how to carry out a task.
- Imagine and tell stories.



Moving Packages

Base Activity

1. Have one cube built with six bricks. This cube will represent a package.
2. In groups of 4-6, children stand in a row.
3. Each row has a leader in front holding one package.
4. The leader passes the package under his or her legs to the person behind, who passes over his or her head to the next.
5. Continue with this under/over movement.
6. The last child in the row passes the package back to the leader.
7. As a challenge, add in additional cubes (packages) for the group to transport.

Guiding Questions:

- *What other ways can you pass the cube (e.g., rotating, one or two arms, etc.)?*
- *How does the movement of the cube (package) relate to the transportation of packages?*

Children learn to:

- Tackle new tasks confidently.
- Engage in physical movement.
- Develop own ways of carrying tasks.



Six Bricks Activities

Build The Picture

Base Activity

1. In groups of 3-4, children mix their bricks together and choose a leader.
2. The adult whispers a word related to transportation, like car, to the leader.
3. Back with his or her group, the leader quickly builds that word for the others to guess.
4. The group may not ask questions but can call out words. The leader can say when they get it right.

Part 2

5. Choose a new leader and repeat the activity with a new word.
6. Continue until all children in the group have been a leader.

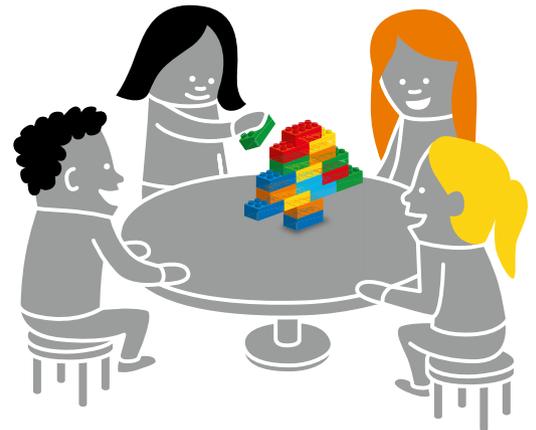
Guiding Questions:

- *How did the first group figure out the word?*
- *What can you do to help the next leader of the group?*



Children learn to:

- Engage in creative problem-solving.
- Speak about future planned activities.
- Use strategies learned earlier (representing).



Air and Water

Base Activity

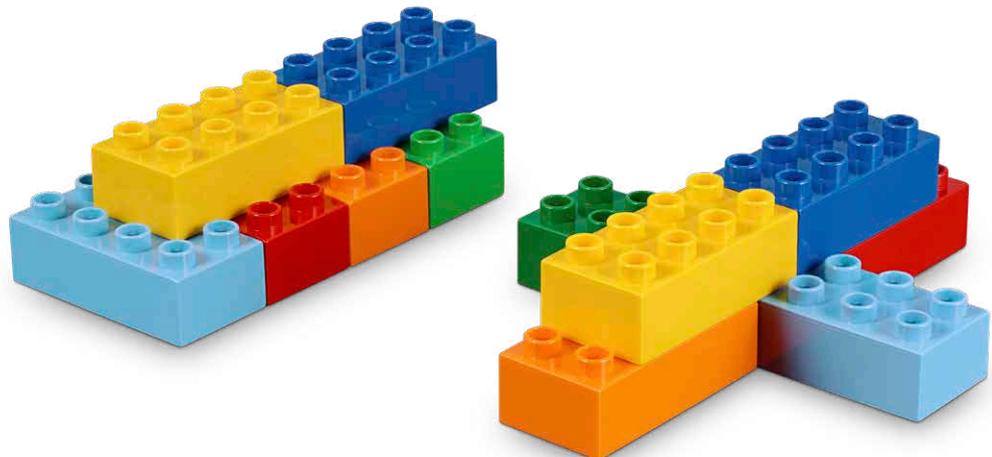
1. Children use their six bricks to build a vehicle that can transport packages by air or over water (like a river or ocean).
2. Then they take turns describing how their vehicle travels in the air or over the water.
3. Then have them identify the job of the person who would be operating their vehicle.

Guiding Questions:

- *What types of packages does it transport?*
- *How does your vehicle move?*
- *Do you have any questions to ask your friends about their model?*

Children learn to:

- Engage in creative problem-solving.
- Imagine and tell stories.
- Use strategies learned earlier (representing).



Six Bricks Activities

Build a Bridge

Base Activity

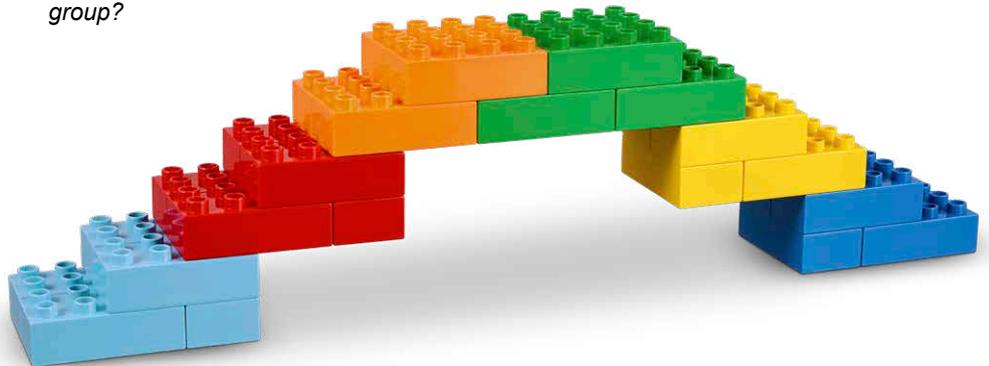
1. Start this activity by discussing bridges and how they are used in transporting packages.
2. In groups of 4, children combine their bricks and think of ways to build a bridge over a “river.” (Use a piece of blue material or paper on the floor for the children to imagine as the river.)
3. Give the children time to discuss and plan how they will span the river.
4. Allow the children time to build their bridge. Warn them when time is almost up.
5. Test the strength of each bridge (ask the children for ideas, e.g., using a toy or books).

Guiding Questions:

- *How can you measure the length you need to span with bricks?*
- *What would make the bridge stable? What will happen if it is heavy?*
- *How will you organize the different tasks in your group?*
- *How is your bridge used to transport packages?*
- *How did you work together in the group?*

Children learn to:

- Engage in creative problem-solving.
- Negotiate when and how to carry out tasks.
- Make reasoned choices and decisions.



Supporting Activities

- Using a camera, smartphone, or tablet, children could take photographs of their creations, which can then be displayed in future sessions.
- Give children a collection of relevant words, each word fixed to a separate LEGO® DUPLO® brick. Children can then create their own poems about transporting packages by locking the bricks together in a poetry tower.
- Ask half of the children to take on the role of a reporter and the other half to take on the role of a transportation designer. Have the

reporters interview the designers about a new form of transportation, transportation job, transportation tools and equipment, or package deliveries as they are designing and creating.

- Ask the children to create short animated films of their models. This could be done using a tablet and an animation app.
- Ask children to create a simple pop-up book about the way packages are transported in their town – there are websites that give advice about creating such books.

During each session, we recommend that children be encouraged to rebuild their models and play with them after they're built. Ask children to create a short role-play scene with their models or figures.

If you have additional time in a session or want to challenge the children further, you could use these supporting activities.

Transportation Journey



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