

TEAM MEETING GUIDE



FIRST[®] LEGO[®] League
Global Sponsors



The **LEGO** Foundation 



Table of Contents

Introduction to <i>FIRST</i>[®] LEGO[®] League Discover	4
PLAYMAKERSSM Challenge	5
How to use the <i>Team Meeting Guide</i>	6
Early STEM and Playful Learning	7
What Materials Do I Need?	8
How Do I Support Parents and Guardians?	10
Prepare for the Celebration Event	11
Session 1: Let's Get Moving	12
Session 2: Let's Get Playing	13
Session 3: Let's Get Problem-Solving	14
Session 4: Let's Get Climbing	15
Session 5: Let's Play a Game	16
Session 6: Let's Use Ramps	17
Session 7: Let's Improve	18
Session 8: Let's Be Innovative	19
Session 9: Let's Get Connected	20
Session 10: Celebration Event	21
Appendix 1: Six Bricks Activities	22
Appendix 2: Supporting Activities	28
Appendix 3: Reviewing Questions	30

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

Welcome to PLAYMAKERSSM!

This year's *FIRST*® *LEGO*® League Discover challenge is called PLAYMAKERSSM. Teams will learn about how people stay healthy through playful physical activity. They will explore some of the problems of designing an obstacle course for a local outdoor space that can be used by lots of different people. See page 5 for a description of the PLAYMAKERS Challenge that you can share with your teams. A scaled-up version of this story can also be found on the mat.

In this program, 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 as a Team

In this program, children work together in teams of four using pieces from the STEAM Park by LEGO Education and a Discover set for each team. 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.



PLAYMAKERSSM Challenge



Explore!

Welcome to PLAYMAKERSSM! Your town needs more spaces for people to climb, run, swing, roll, and jump. Children will design and create a space for people to be physically active. Help them explore the fun ways to encourage people to play and be active. How will children use hills, trees, walls, and ramps? Encourage them to design and build an obstacle course. Then, guide them to improve on their first ideas.

Create and Test!

Help children design and build a space for people to be active and healthy. They will use the included sets and components to build an obstacle course. Show children examples of how to include different equipment. Model ways to test and improve on their ideas as they go.

Share!

Help children record their ideas and designs in their *Engineering Notebook*. Guide them to share their obstacle course and what they have learned along the way with others. Run the celebration event; invite the children's family and friends to this special team meeting.

Most of all ... HAVE FUN!



How to Use the *Team Meeting Guide*

There are 10 sessions outlined in this *Team Meeting Guide*. In general, plan for one team meeting to last about an hour, split into activities of different lengths. The final session is the celebration event, for which you might need longer than an hour.

Each session contains the following elements:

- A) A **Teaching Tip** to help you develop your classroom STEM practices.
- B) A **Big Question** to help frame the session.
- C) Most sessions include a **Six Bricks Warm-Up**. The recommended activity has been selected to support the main direction of the session. More information on getting started with Six Bricks can be found in Appendix 1.
- D) **Task 1** introduces the context of the session, focuses the children, and provides example discussion questions.
- E) **Task 2** includes a brief for what children should build and test. The session should always allow for creativity, tinkering, and free building where possible.
- F) **Task 3** enables children to document and share their models, sketches, and ideas.
- G) **Illustrations** are used throughout the sessions to highlight key moments and concepts.
- H) **Key Vocabulary** terms are suggested for you to practice with children.
- I) The **Tips** offer additional information to help each session be as successful as possible.
- J) A quick overview of the intended session **Outcomes** is shown to guide you through the program.



Six Bricks activities are used as a simple tool for engaging children in playful learning. Each activity uses six colored LEGO® DUPLO® bricks per child.



Early STEM and Playful Learning

Research shows that when young children are engaged in playful science, technology, engineering, math (STEM) experiences, the experiences ignite children's natural curiosity, grow their knowledge, and develop habits of learning.

When educators nurture these natural science tendencies, educators build a bridge between the real world, STEM skills, language, and literacy.

In *FIRST*® *LEGO*® League Discover, children are given meaningful problems to solve. They work together to wonder and question, build and tinker, and listen and share.

By the end of the program, children emerge more confident, are better equipped to face future challenges, and have discovered the joy of learning.

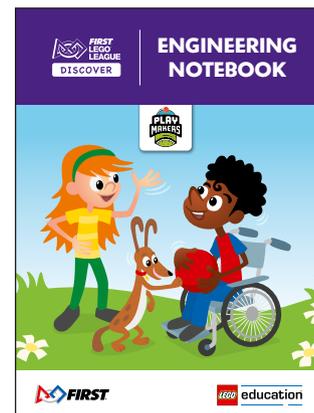


It is important that the children have fun. The more playful the sessions are, the more motivated the children will be. We want them to build, tinker, and rebuild. They should have the time and space to question and wonder – to ask about healthy physical activity, obstacle courses, and the needs of people in their community. 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.

What Materials Do I Need?

PLAYMAKERSSM Engineering Notebooks

Teams will receive a set of PLAYMAKERSSM *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 team member. Ensure children use their notebooks during the celebration event when they talk to the reviewers.



PLAYMAKERS Discover Set

Each team will get one PLAYMAKERS Discover set consisting of a LEGO® DUPLO® obstacle course, LEGO DUPLO figures, sets of Six Bricks, a mat, and three building cards. The Obstacle Course 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 their models together.

Each Discover set includes five sets of Six Bricks. 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. Six Bricks are one of the LEGO Foundation's tools for introducing learning through play. Through fun and short activities, children can practice different skills, including language and communication, problem-solving, and collaboration.



Discover More Set

The Discover More set is designed for children to take home. It has an accompanying letter 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. These activities highlight the habits of learning, teach key STEM concepts, and support the playful learning that takes place in the classroom.

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



LEGOfoundation.com/sixbricks

What Materials Do I Need?

LEGO® Education STEAM Park

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 functions.

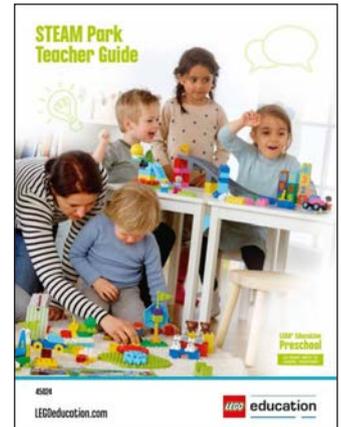
The *STEAM Park Teacher Guide* can be found on the LEGO® Education website, alongside other ideas and inspiration for preschool teachers.

education.lego.com/en-us/support/preschool/teacher-guides

The teacher guide introduces the set, as well as learning grids and eight easy-to-implement activities. We suggest pre-teaching the following three sessions, using the outlines in the teacher guide, if you or your class are new to STEAM Park:

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

The STEAM Park set comes in a cardboard box. The STEAM Park set might be more easily managed and stored in a plastic storage tub, especially with frequent use. This is, however, down to the preference of the teacher.



How Do I Support Parents and Guardians?

The Discover More set has been designed specifically to support continued learning at home. Each activity provides a meaningful, engaging, and playful experience with the child, providing ideas of how to change what they've created and what questions to ask.

How Should I Communicate This to Parents and Guardians?

We have provided a letter that can be edited as needed and printed on school paper to hand out 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 and the letter.

The teachers and support staff in schools 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 the program is being run 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 the *FIRST*[®] LEGO[®] League Discover program 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 in which the parents and guardians can hear more about the program, see the brick sets, and receive their Discover More sets.

This meeting could cover:

- What the program is
- What the habits of learning are
- The celebration event at the end of the program
- The opportunities provided by the program
- The Discover More set and how to support children at home

How Should I Follow Up on the Discover More Activities?

It is important to follow up on the activities 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.

If any of the other Six Bricks activities work well with the children, then they could try these out at home too. Encourage them to try these, always with the emphasis on both the adult and child having fun.



PREPARE FOR THE CELEBRATION

At the end of the program, 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 review sheets 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.



SESSION 1: Let's Get Moving 1

Teaching Tip: Recognize times in the school day when the children engage in STEM learning activities similar to this one (for example, outside, at the water table, with sand, when painting, or when building).

At the beginning of this session, you will need to split the children into teams of four, with whom they work during the program.

What can we explore with the STEAM Park set?

Six Bricks Warm-Up (20 minutes)

Discover Six Bricks I 2

Tell the children they will use the Six Bricks both in the classroom and at home to learn new skills and explore new ideas.

Additional time is given in this session to sort and help familiarize the children with the Six Bricks.

Task 1 (10 minutes)

Have some children mime different physical **movements**, games, and sports and select others to guess what they are miming. Then repeat, swapping the children miming and guessing. To encourage language use, you could ask them:

- What words can we use to describe this movement?
- Where might you see this movement? Who might be doing it?

Task 2 (30 minutes)

Have the children play with the STEAM Park sets. Encourage the children to build anything they want. This offers them an opportunity to play freely with the pieces, using their imaginations and discovering the pieces' functions. Their models could include things that **spin**, **roll**, **swing**, and **turn**. To develop this activity toward the theme, help children identify pieces in the set that would help them play and be physically active outside.



KEY VOCABULARY

movement, spin, roll,
swing, turn

TIPS

- 1 It is recommended that you unpack and look through a STEAM Park set before the first session.
- 2 The full activity can be found in Appendix 1.

OUTCOMES

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

It does not matter what the children build in this session.

SESSION 2: Let's Get Playing

Teaching Tip: 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.

Where can we play in our town?

Six Bricks Warm-Up (10 minutes)

Discover Six Bricks II **1**

Task 1 (10 minutes)

Explain the *FIRST*® LEGO® League Discover program to the children. Tell them they will **design** a space that would help keep people **active** and **healthy** and, at the end, they will take part in a fun celebration event.

You could ask the children to:

- Name different places they like to play in their town.
- Describe their favorite types of playground equipment or part of an obstacle course.
- Give a reason their town needs a new space to play in.



Read the comic strip with the children. **2**

Task 2 (25 minutes)

In their teams, have the children build a piece of playground equipment that already exists in their town. This task should be about free building, so allow them to use creativity and imagination when representing the different places or equipment they choose.

Task 3 (15 minutes)

Have the children record what they've done in their *Engineering Notebooks*. There is a space in the *Engineering Notebook* to write or draw a picture of their favorite play equipment. Have the children add as many words to their drawing as they can:

- Play **equipment** name
- Description (such as use, action, colors, people)

KEY VOCABULARY:

design, active, healthy, equipment

TIPS

- 1** The full activity can be found in Appendix 1.
- 2** The comic strip is found on the back of the *Engineering Notebook* and on the mat.

OUTCOMES

The children will build equipment and be able to describe the equipment. They identify existing solutions to a problem.

They should be growing in confidence to talk about what they have built with others.

SESSION 3: Let's Get Problem-Solving

Teaching Tip: This session introduces problem-solving as a term as well as a habit of learning. Use these terms often to encourage the use of correct vocabulary.

How can we use an empty space to get people playing and active?

Six Bricks Warm-Up (10 minutes)

What Can You Build? 1

Task 1 (10 minutes)

Unfold the PLAYMAKERSSM mat and look at it with the children. Talk about what things they can see. Point to different locations on the mat.

You could ask the children:

- What could we play in this area?
- Why are the hill, wall, and tree a **problem**?
- What could we play in this area? What sort of play equipment could work in that space?

Task 2 (25 minutes)

In their teams, have the children build the **obstacle course** on the hill using the building cards found in the Discover set. They can use the STEAM Park set to build other ideas for using the hill to be active in fun and playful ways. These ideas could include climbing bars, steps, or ramps.

Task 3 (15 minutes)

Have the children show their solutions for using the hill to be active and role-play the solutions with the LEGO[®] DUPLO[®] figures. They could also tell the story of what activities the figures could do around the hill.



KEY VOCABULARY:

problem, obstacle course

TIPS

- 1 The full activity can be found in Appendix 1.

OUTCOMES

The children should follow visual instructions (building cards) to build the obstacles.

It does not matter if the obstacles are built differently than the images on the building cards.

They will use role-play to play with the obstacles they build.

SESSION 4: Let's Get Climbing

Teaching Tip: In this session, the children build new ideas using **existing** spaces and opportunities. Look for real-world examples, including photos and videos, when introducing STEM concepts.

How can we use things that are already around us to be physically active?

Six Bricks Warm-Up (10 minutes)

Tricky Tower **1**

Task 1 (10 minutes)

Ask the children to think about a big, tall tree that would be good for **climbing**.

You could ask the children:

- What does the tree have that helps us to climb it?
- What could you add to the tree to make it a fun place to play (such as a swing, step ladder, rope, or tree house)?
- What **movement** would you use on the **equipment** in the tree?

You can have the children consider or look at examples of how to attach equipment to the tree without damaging it. You might have them think about what sort of tree they would use.

Task 2 (25 minutes)

Have the children build models of a tree and the obstacle course equipment they would add to it. They should use the LEGO® DUPLO® pieces from the STEAM Park set.

They could build the first one or two things individually, but encourage them to work with a partner or in the team to build or combine pieces.

Task 3 (15 minutes)

Have the children draw and label the equipment they designed for the tree in their *Engineering Notebooks*. They could name the equipment and describe the movement that would be done to use it. Ask the children to discuss why they chose certain play equipment. It could be because it was most fun, provided different types of movement, or made good use of the tree's shape or height.

KEY VOCABULARY:

existing, climbing, movement, equipment

TIPS

- 1** The full activity can be found in Appendix 1.

OUTCOMES

The children will use their preexisting knowledge.

They should work with others in their team to share ideas and pieces.

SESSION 5: Let's Play a Game

Teaching Tip: Use instructions and rules for simple tasks and games as a way to introduce children to early coding and computational thinking. Step-by-step instructions can be used as basic program instructions.

What sort of game could you invent to get people moving?

Task 1 (20 minutes)

Ask the children to think about a game they might play on a playground. **1**
You could have them **invent** a new game, using familiar sports equipment such as balls and hoops.

You could ask the children:

- What is the game?
- How do you play? What are the instructions to play? What rules are there?
- Can you change your game idea to include using a wall?

Task 2 (25 minutes)

In their teams, have the children build a scene using the STEAM Park set to show one or more people playing the game. They could build the wall, the game area, and other equipment or objects they need to play.

Encourage children to use their imaginations and be creative when designing the game, creating the **instructions** and **rules**, and showing how it is played in the scene.

Task 3 (15 minutes)

Have children share the game rules and the scene they built.

You could ask the children:

- Why would people like to play your game?
- How can you describe the rules of the game?

KEY VOCABULARY:

invent, instructions, rules

TIPS

- 1** A game might include ball sports, running, or tag.

OUTCOMES

The children will identify different ways to be active (for example, playing a game).

They will describe simple instructions.

SESSION 6: Let's Use Ramps

Teaching Tip: Think about how the STEM content is explored in this lesson. See how specific science concepts are integrated into the problem-solving tasks.

How can we use ramps to help us have fun and be active and healthy?

Six Bricks Warm-Up (10 minutes)

Build a Cube 1

Using this activity, ask the children:

- Would a cube roll down a **ramp**? Why?
- When you throw a cube in the air and catch it, why does it come back down?

Task 1 (10 minutes)

Show the children photos or videos of objects of different shapes rolling. Examples could include marbles, toy cars, or people rolling down a hill.

You could ask the children:

- What is it like to go down a slide?
- What happens when you start running or rolling down a hill or ramp?

Task 2 (25 minutes)

Have the children build the inclined track from the STEAM Park set to represent a ramp or make a ramp using a length of card stock, wood, or a book 2. Build and test different vehicles and LEGO® DUPLO® figures rolling and sliding down the ramps. Use the ramps to explore the effect of **gravity** and **momentum** on the objects. Encourage the children to discuss:

- How could we use a hill or ramp to help us keep fit and active?
- Why might this type of physical activity be fun for people?
- Why would including physical activity like this in our obstacle course encourage people to come and join in?
- What other ways might you use gravity and momentum to help keep fit and active?

Task 3 (15 minutes)

Have the children draw and label the ramps in their *Engineering Notebooks*. They could describe the movement you can do while using them and how it makes them feel. Be sure to use the word *gravity* where possible.

KEY VOCABULARY:

ramp, gravity, momentum

TIPS

- 1 The full activity can be found in Appendix 1.
- 2 See the Ramps lesson in the *STEAM Park Teacher Guide* for more guidance.

OUTCOMES

The children will explore and experiment with ramps.

SESSION 7: Let's Improve

Teaching Tip: This session is entirely devoted to iterating and improving ideas and using constraints and needs. Don't be concerned about introducing constraints to focus the children on what they're creating.

How do we improve the obstacle course for our town?

Task 1 (15 minutes)

Tell the children they will build on and improve their obstacle course from previous sessions. They think about the different people in their town and what needs they might have.

You could ask the children:

- Who is in our town?
- How do we **improve** our obstacle course equipment so everyone can use them?

For example:

- Making equipment **accessible** for wheelchair users
 - Adding designs that appeal to different ages
 - Including a space where people can bring their pets
- What would you change from your previous ideas?

Task 2 (30 minutes)

Have the teams build their new and improved obstacle course. Remind them to think about different people who will want to use the equipment. They can build the same models they made in previous sessions but think about what would be different now. Encourage the children to build in pairs within their teams and consider how their new and improved course would appeal to other people they know.

Task 3 (15 minutes)

Have children assemble the improved obstacle course on their mat.

Have children talk about their model:

- What part of the **obstacle course** did you build?
- Did you build it with someone else?
- What does each piece of equipment do? Who will use them?

KEY VOCABULARY:

improve, accessible,
obstacle course

OUTCOMES

The children will work in their teams to build their obstacle course. They will show awareness of others' ideas and that their team might have different opinions.

SESSION 8: Let's Be Innovative

Teaching Tip: Take what the children have learned and challenge them one stage further. Take notice in this session how they can apply prior knowledge of the functional elements in the STEAM Park set.

How can we use a moving part to change our obstacle course?

Six Bricks Warm-Up (15 minutes)

Blind Build 1

Using this activity, ask the children to think about how they can help each other while they build. Looking for and describing pieces for each other will be a useful skill during this session.

Task 1 (30 minutes)

In pairs or as a team, have the children choose an obstacle course piece to build. Use the first part of the task to have them reexplore the **functional** pieces in the STEAM Park set. Get them to think about which pieces move and how they move. As they build, they should model the use of the functional pieces to create moving parts for their obstacle courses. Encourage them to be **creative** and **innovative** when building.

You could ask the children:

- How can you make something move? How is it innovative?
- How is the obstacle course different from when you built it before?
- Why is it better now that it moves?

Task 2 (15 minutes)

Have the children draw and label the moving obstacle course pieces in their *Engineering Notebooks*. They could describe the movement and how they improved on it. Be sure to use the words *creative*, *innovative*, *change*, and *improve* where possible.



KEY VOCABULARY:

functional, creative, innovative

TIPS

- 1 The full activity can be found in Appendix 1.

OUTCOMES

The children will use imagination and creativity to create something innovative and change old ideas.

They will apply knowledge of functional pieces to create something that moves.

SESSION 9: Let's Get Connected

Teaching Tip: 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 program.

How can we combine two ideas together to make one working model?

Six Bricks Warm-Up (15 minutes)

As a class, have the children choose a Six Bricks activity they have done that they would like to do for the warm-up. Have the class agree on this activity together. Ask the children to think about fair ways to make the decision.

Task 1 (30 minutes)

Have the children divide their team into two pairs. Each pair will build an obstacle course piece with a moving part. Encourage them to think about and choose the best idea they have had through the previous sessions. Discuss with them how to decide which idea to choose and how to compromise if they don't agree.

When each pair has built their own piece, or no later than half way through this task, ask the two pairs to combine their ideas into one model. Encourage them to:

- Look at both models and what they do.
- Decide the best parts of each model and what they wouldn't change.
- See ways to connect the models together.
- Rebuild the models, **iterating** on the design, to **combine** them together.
- Discuss who will say what about their model in Task 2.

Task 2 (15 minutes)

Have each group share what they have built. Focus on how they combined their ideas together to create the final obstacle course piece. Have the children **reflect** on which ideas they chose, why, and how they worked together in this session.

KEY VOCABULARY:

iterating, combine, reflect

OUTCOMES

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

They should be encouraged to be persistent and use great teamwork to combine their ideas.

SESSION 10: Celebration Event

Are we ready for the final challenge?

Preparing the Teams (10 minutes)

Welcome the children to the event and tell them what they will do during the session. They will use all their ideas to build a final obstacle course, share their designs from the *Engineering Notebook*, and solve a special challenge. But most of all, they are there to work with their friends, build creative models, and have fun! **1**

The Challenge (20 minutes)

At the event, have the children participate in the following activities:

- As a team, build a final obstacle course.
- Include the hill obstacle course equipment (Discover model) in the final design.
- Use the STEAM Park pieces to make something in their obstacle course move **2**.
- Complete the special challenge.

Special Challenge (10 minutes)

Match up two teams to work together. Together they must set out their obstacle courses/play spaces as if they are joined together as one. Then, they create a new part of the obstacle course that would join them. Ideally, this new piece of equipment should have a moving part using functional pieces from the STEAM Park set.

Reviewing the Teams (throughout the event) **3**

As the children are building, the reviewers should visit them, talking with them about what they have built, why they built it that way, and the designs in their *Engineering Notebooks*.

Reviewers could ask the children:

- What did you design and build?
- How did you solve the special challenge?
- What are the differences between places for playing in your town and what you have built?
- How did you work as a team?

Celebrate (20 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. **4**

TIPS

- 1** It is important the children can relate what they do at the event to the sessions they have completed during the program as well as how the sessions have prepared them for these challenges.
- 2** Help the children pick out a functional piece if they do not have one chosen.
- 3** Assign at least one adult (a parent or helper) to each pair of teams. They can help the teams stay on task and will talk with them. The reviewers will decide on awards for each team. Reviewing questions are provided in Appendix 3 to guide the adults.
- 4** 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.

Appendix 1: Six Bricks Activities

In addition to the eight Six Bricks activities listed in this *Team Meeting Guide*, you can find more activities here: LEGOfoundation.com/sixbricks

Discover Six Bricks I



Children learn to:

Play and become familiar with the bricks

Listen and respond to questions

Use descriptive language

Base Activity

1. Each child separates his or her bricks and spread 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.

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

Guiding questions

- *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?*
6. Children restack their six bricks.



Comparing heights and numbers

Complete steps 1 – 4 of the base activity

5. Children look around the room and see who has the same color.
6. They quickly go and stand together in color groups.

Guiding questions

- *Which color group has the most, least or the same number of bricks? How can we check?*
- (Try to let the children think of solutions – like building color towers for each group)



Find matching colors

Complete steps 1 – 4 of the base activity

5. Children find something in the room (or outside) of the same color, and match it to their brick.

Guiding questions

- *How can you check if the color the exact same, lighter or darker?*
- *What in nature is the same color as your brick?*



Appendix 1: Six Bricks Activities

Discover Six Bricks II



Children learn to:

Use spatial skills to orientate themselves

Keep attention and resist distraction

Initiate activities

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...?)



Try with two hands

Complete step 1 of the base activity

2. Children pick up the first and last brick and swap their places (have fun doing this a few times).
3. Then they pick up the red and green brick and swap places (vary colors).
4. Using their left hand, children pick up the blue brick and place it in their lap.

(Vary colors, hand and places you use in the instructions).

Guiding questions

- What other instructions can you think of? (Let the children suggest and try their instructions)



'Think' with your hands

Complete step 1 of the base activity

2. Children pick up two bricks and see how many different ways they can click the two together.
3. Using all their bricks each child tries to discover what shapes you can make with six bricks.

Guiding questions

- In what different ways that did you click the bricks together?
- What shapes or objects did you make with your bricks? (e.g. staircase, tower...)
- What was fun about building with the bricks?



Appendix 1: Six Bricks Activities

What Can You Build?



Children learn to:

Invent and describe characters (for stories)

Come up with stories in groups

Ask questions and suggest answers

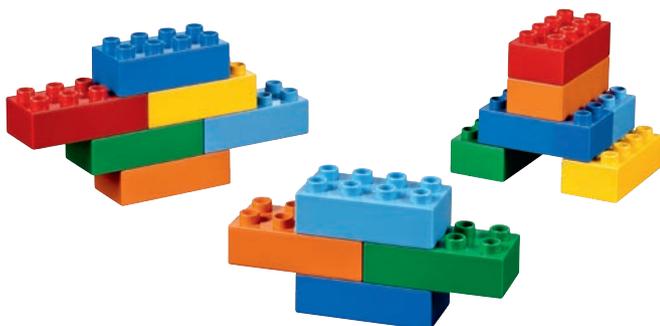
Base Activity

1. Children use their six bricks to build any creature.
2. Then they take turns to describe their creature.

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?*



Build to remember a story

Link this activity to a story you read with the children the previous day

1. Working in pairs or small groups, ask the children to think back to the story and to talk about it.
2. Let the children build something (not only creatures) from the story that they heard yesterday.

Guiding questions

- *What have you built (children explain their story and model)?*
- *What questions can you ask your friends about their model?*



Walk and sort by creature

Complete steps 1-2 of the base activity. Ask the children to stand up so they can walk around.

3. Let the children figure out ways to sort into groups by creature, like features (wings, feet etc.)
4. Each child then walks to a different part of the room according to the sorting rule.

Guiding questions

- *How did you figure out where to go?*
Is this the only place you could go?
If not, where else?
- *How else could we choose to walk and sort with your creatures?*

Appendix 1: Six Bricks Activities

Tricky Tower



Children learn to:

Move fingers and hands with precision

Persist in the face of difficulty

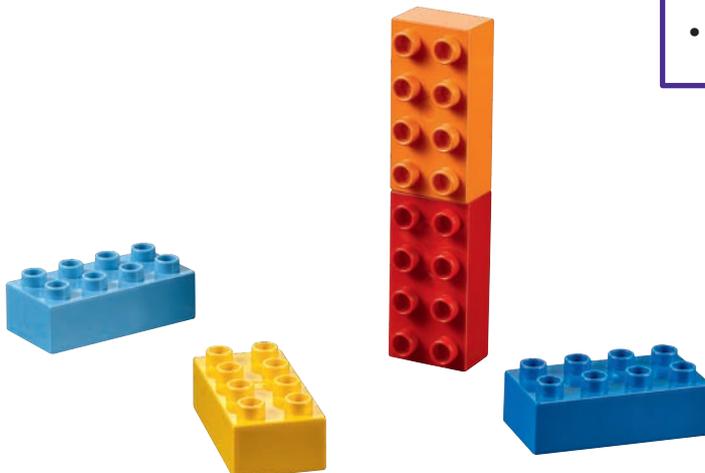
Develop own ways of carrying out tasks

Base Activity

1. Children separate their bricks and lay them out in any order.
2. Then they balance all their six bricks, short end to short end, building a tower.
3. Children try changing the hand they use when building.

Guiding questions

- How did you balance your bricks? (in turn, let some of the children explain what they did)
 - If you have to try a new way of balancing the bricks, what will you do?
4. Finish the activity by letting them restack their six bricks.



Experiment with building towers

Complete step 1 of the base activity

2. Try different ways to balance the bricks to create a tower without clicking the studs together.
3. Try using left or right hand, only one or two fingers, and a clothes peg to pick up bricks.

Guiding questions

- How did you build your tower? (Let the children explain and demonstrate with their bricks)
- What makes a tower stable? How do you make the highest or shortest towers?



Build towers in pairs

1. In pairs, children combine all their bricks to build a tower by balancing bricks.
(Give different instructions for building the tower)

Guiding questions

- What is different about building with 12 bricks?
- What is helpful or hard about working in pairs

Appendix 1: Six Bricks Activities

Build a Cube



Children learn to:

Coordinate and balance using their whole body

Enjoy solving problems

Engage in collaborative tasks with peers

Base Activity

1. Children build a cube with six bricks so it does not fall apart (See picture for an example).

Guiding questions

- Which two colors are on top, at the bottom and middle?
 - In pairs, how can one of you give, and the other follow, instructions to build a cube?
 - What instructions are easier and harder to use?
2. Children rotate their cube while holding it behind their back (or above the head)
 3. They throw the cube up in the air and catch it.
 4. Toss it from one hand to the other.
 5. Hold it under their chin.

Guiding questions

- What else can you do? In how many different ways can you hold your cube?
- How long can you balance the cube on your head? Can you walk around with it?



'Simon says' with cubes

Complete step 1 of this activity.

2. In pairs or small groups of 3-4, children take turns to show moves which the others copy. (Let the children come up with rules, like 'if you drop the cube, then...' or 'you have 3 turns')

Guiding questions

- How can a friend help you if you have problems getting it right?



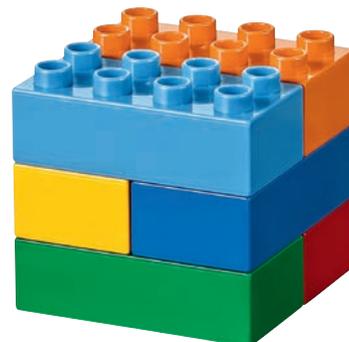
Measure with cubes

Complete step 1 of this activity.

2. Two children stand so everyone can see them. The rest use their cubes to build a measuring tower with the same height as these two children.

Guiding questions

- How can we use the cubes to measure the children? How many cubes do we need?
- What else can you measure?



Appendix 1: Six Bricks Activities

Blind Build



Children learn to:

Keep attention and resist distraction

Persist in the face of difficulty

Use sense of touch to solve a challenge

Base Activity

1. In pairs, one child closes his eyes (or covers them with a scarf) and the partner builds a model with six bricks.
2. The 'blind' child feels the model to notice how it is built.
3. Hand the model back to the partner, who then hides it.
4. Open your eyes (or remove the scarf) and build the model.

Colors are not important, only the shape.

5. The partner can give clues to help you remember.
6. Children compare their models when finished.

Guiding questions

- What was it like doing this activity?
 - How did you remember the model?
 - What clues proved most helpful as you were building?
7. Swap roles and repeat the activity.



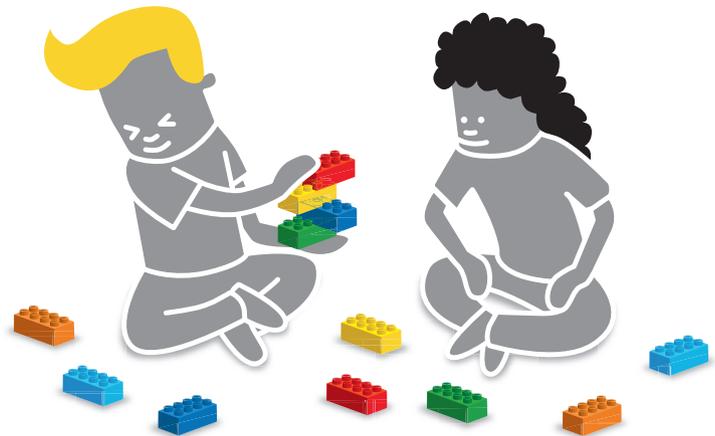
Keep your eyes closed

Complete steps 1-3, but stay 'blind' while building the model as well.

4. Compare the two models when finished.
5. Swap roles and repeat the activity.

Guiding questions

- What is it like to build without seeing?
- What is harder, easier or different?



Appendix 2: Supporting Activities

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 longer than an hour for each session, or you feel the children can be challenged further, you can use some of these supporting activities.

1. Using a camera, smartphone, or tablet, children could take photographs of their creations, which can then be displayed in future sessions.
2. Give children a collection of relevant words, each word fixed to a separate LEGO® DUPLO® brick. Children can then create their own poems about their town and the new play spaces by locking the bricks together in a poetry tower.
3. Ask half of the children to take on the role of a reporter and the other half to take on the role of a play space designer. Have the reporters interview the designers about a new play space, play equipment, or game they are designing and creating.
4. Ask the children to create short animated films of their models. This could be done using a tablet and an animation app.
5. Ask children to create a simple pop-up book about the new play spaces in their town – there are websites that give advice about creating such books.

NOTES/RESOURCES/WEBSITES

Appendix 3: Reviewing Questions

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

Building the Active Space

- What equipment did you include in your new play space?
- How did you decide what you wanted to build?
- How does it work? What STEAM Park pieces have you used to make something move?

Completing the Special Challenge

- How did you decide how you were going to connect your obstacle courses/play spaces?
- What did you build to connect the two?

Working as a Team

- How have you been working together?
- What job do you have on your team?
- How have you shared ideas in your team?





LEGO, the LEGO logo and DUPLO are trademarks of the LEGO Group. ©2020 The LEGO Group.
FIRST[®] is a registered trademark of For Inspiration and Recognition of Science and Technology (*FIRST*).
LEGO[®] is a registered trademark of the LEGO Group.
FIRST[®] LEGO[®] League and PLAYMAKERSSM are jointly held trademarks of *FIRST* and the LEGO Group.
©2020 *FIRST* and the LEGO Group. All rights reserved. 10082001 V1