STEAM Park Carnival

A LEGO® Education Program

Advanced STEAM Program

STEAM Park Carnival – Let's Play!

LEGO® Education STEAM Park Advanced STEAM Program

Program Overview

5 days
3 hours per day

Early Childhood STEAM Park Program

Week 2 of STEAM Park Carnival is based around games and rides you might find at a carnival. Each day, students will explore one aspect of the week's theme, incorporating STEM, art, music, literacy and physical activity as well as important skills like teamwork. At the end of the week, students will work together to create the carnival with games and rides.
Note: If you campers previously participated in STEAM Park The Show, you include student created ideas around food, entertainment and animals with this week's culminating event.

Program at a Glance		
Day 1	**Let's Ride** What kind of rides are at a carnival? How do rides move?	• Lesson: Gears • Students will create a ride for the carnival.
Day 2	**On the Water** What kind of fun things can you do with water at a carnival? What objects float on water? What objects sink? How do objects move across water?	• Lesson: Moving on Water
Day 3	**Let's Play** What kind of games do we play at a carnival? How can I make a game fair to play?	• Lesson: Probability • Students will create a game to play.
Day 4	**Helping Others** How can I help all friends enjoy the carnival?	• Maker Lesson: Mr. Bear and the Stairs
Day 5	**The Big Event** How can we help people who need assistance?	• Create a Carnival with rides and games.

Prior to First Day

1. Organize STEAM Park sets in large tubs.
2. Determine a naming convention for each set of STEAM Park tubs. You could use colors, shapes or a familiar image for students to use to easily locate their set. Students will work in teams, so the naming convention you select could also serve as the team name.
3. Gather any consumable materials needed for the week.
4. Locate books or other types of media to use to support the daily themes for the program.
5. Determine procedures for getting out the STEAM Park sets, working collaboratively and cleaning up each day.
6. Create journals for students to use during the week. You can use plain paper or story paper (place for student drawing and lines for writing). Place a construction paper cover on the front and back. Students will be designing the front of their journals. If you know students names, write the name of the student on each journal.
7. Prepare the Six-Bricks sets. When Six Bricks is mentioned in the activities, it refers to a set of six 2 X 4 (two studs by four studs) LEGO® DUPLO bricks. (Each set has one 2 X 4 of each color – red, orange, blue, green, lime green, yellow.) Each set of six bricks are built identically, so they can be used for a variety of activities. Six of the Six-Brick sets can be created from one box of LEGO® Education Creative DUPLO sets. Build sets of Six Bricks prior to the first day. Extra DUPLO pieces can be used as additional pieces for other building activities during the week.

Ideas for use with attendees before and after program

Place a pile of LEGO® DUPLO bricks in an area for

- Sorting
- Free building
- Building letters
- Counting and grouping
- Building stories
- Building tall structures
- Making patterns

STEAM Park Carnival — Let's Play!
Day 1

Let's Ride
Students are introduced to this week's theme, STEAM Park Carnival — Let's Play! Today they will investigate rides at carnivals and how they move. Students will create their own carnival ride using LEGO® DUPLO blocks from STEAM Park.

Big Questions
What kind of rides are at a carnival? How do rides move?

Materials
- STEAM Park sets
- Six Brick DUPLO Sets Or LEGO® DUPLO bricks
- Books about fairs or carnivals rides
- Chart paper
- Student journals (could be paper stapled together with students creating the outside of the journal using construction paper and other consumable materials). An example journal page is included at the end of Day 1 lesson plan.
- Inspiration cards found in the STEAM Park set box
- Inspiration photos found in these lesson plans
- Various age appropriate craft materials:
    - Crayons
    - Child safe Markers
    - Paper plates
    - Pom poms
    - Glue sticks
    - Construction paper
    - Scissors
    - Big googly eyes
    - Yarn

Day 1: Outline for the day

	Task	Time (approximate)	Materials
Welcome (30 min)	Program Rules and Expectations	5 min	• Chart paper • Markers
	My Letter	15 min	
	Wonderings	5 min	• Chart paper • Markers
	Important message from the STEAM Park Manager	5 min	• None
Let's work together!	Two-Stud Trick	10 min	• Six-Brick DUPLO Sets Or • LEGO® DUPLO bricks
	Clean Up	3 min	
Circle Time: Stories and Songs	Book or story about carnival rides	10 min	• Book about a carnival or fair
	Songs about carnival rides	5 min	• Song about a carnival or fair
Let's Build STEAM Activity 1	Rides that Roll: Ramps	20 min	• LEGO® Education STEAM Park set
	Clean Up	3 min	
Break	Snack and Restroom	20 min	• Snack for the day
Let's Move	Grab the Brick	15 min	• Six-Brick DUPLO Sets Or • LEGO® DUPLO bricks
	Clean Up	3 min	
Let's Create	Merry-Go-Rounds	15 min	• Paper plates • Pom poms • Glue sticks • Markers • Construction paper • Scissors • Big googly eyes • Yarn • Other age appropriate craft materials
	Cleanup	3 min	

Let's Build STEAM Activity 2	Rides that Turn: Gears	30 min	• LEGO® Education STEAM Park set
	Clean up	3 min	
Let's Celebrate the Day!	Journals	10 min	• Teacher created student journals

Welcome

Welcome students to the first day. Let them know you are excited to see them and you know that they will have so much fun this week. Because we are going to be working together every day, it would be fun to get to know each student.

My Letter

Time: 15 minutes
Materials:

- Creative DUPLO Bricks

Ask students to build the letter of their first name! Use their builds to have students introduce themselves to their new friends and share something they like to do.

Take a picture of each student and his or her letter build.

Program Rules and Expectations

Time: 5 minutes
Materials:

- Chart Paper
- Markers

Using a piece of chart paper, establish or share group rules and expectations for the week as a class. You can have students sign the chart paper with their name, the first letter of their name (if able) or a sticker.

Wonderings

Time: 5 minutes
Materials:

- Chart Paper
- Markers

Questions to ask:

- What do you know about carnivals rides?
- What kind of rides do you think you might see at a carnival?

Important Message from the Park Manager

Time: 5 minutes
Materials: None
Introduce Mr. Parker, the manager at the STEAM Park Carnival.

Read the following to the students:

> *Hello friends! Welcome back for another week! Remember, at STEAM Park, we like to work together to solve problems and learn from each other. What do you think it looks like when we work together? What do you think it sounds like when we work together? What are some things you can do to be a good friend to your group?*
>
> *Every day, we are going to work on an activity that will help us get better at working together! Are you ready for today's challenge? Today, your teacher is going to put you in groups and you are going to work on a fun activity together.*

Let's Work Together: Two-Stud Trick

Time: 15 minutes
Materials:

- Six-Brick sets or loose bricks

Explain to students that working together is an important skill and just like other skills, we can practice it to get better and better.

Activity

- In smaller groups, students take turns building onto a brick placed in the middle of their group.
- Each time they add a brick, they must cover **only** two studs. See how high you can build before the model topples over.

  Guiding questions:
  - How did it go in your group?

- What have you learned about keeping balance?
- What will you do next time?

Activity

- Give the students time to discuss ideas for keeping balance.
- Repeat the activity.

Guiding question:

- How did your plan work?

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students put the bricks back together in the Six-Brick sets or clean up the LEGO® DUPLO bricks used and put them away.

Circle Time: Stories and Songs

Time: 15 minutes
Materials:

- Books and songs about carnivals

Read a book about carnival rides.
Sing a song about carnival rides.

Let's Build: STEAM Activity 1 — Ramps

Time: 30 minutes
Materials:

- LEGO® Education STEAM Park set
- Inspiration photo of ramps
- Inspiration photo of larger vehicles
- Track template (print six of these pages for each group)
- Graphs for recording results
- Pencils
- Glue or tape
- Scissors

In this activity, students will learn about how and why things roll. They will predict and measure distances using non-standard units.

Notes for Teachers — The Science behind the Play
Several factors will cause an object to roll or slide, beginning with a force (i.e., a push or pull) that acts on the object. Gravity is a force that pulls objects toward the earth or down a slope. The shape of an object affects how it moves down a slope. Objects such as balls, which do not have corners or edges, will roll. Other objects will tend to slide rather than roll due to their shape. Size and texture determine the speed of rolling or sliding.

Connect

1. Ask the students to describe what it is like to go down a slide.
2. Discuss why/how people move from the top to the bottom of a slide without using their bodies to assist them. In other words, explain that people move down a slide because of gravity, which is a force that pulls objects toward the earth.
3. Tell the students that you are going to read the beginning of a story about a group of people who are preparing STEAM Park for its daily visitors. You can show them the inspiration photo or use the figures to act out the scene.
4. Read the following story aloud:

   Parker, the park manager, wants to build a new ride for visitors to enjoy. He asks his neighbor, Ms. Engels, and her grandson, Arty, and Arty's friends, Sienna and Matt, to help.
   "Let's build a ramp and some cars to ride down the ramp," Parker said.
   "I have an idea! Let's place a line of numbers at the bottom of the ramp and guess how far the cars will roll!" Arty said.
   "Great idea! We can try it out and see what works the best," Ms. Engels said.

Construct

1. Tape or glue all six pages of the track template together to comprise the entire length of the track.
2. Working in pairs or as a group, ask the students to take turns placing bricks to build the two smallest ramps and the sides of the track as shown in the inspiration photo. Make sure the students place the number bricks in the right places.
3. Position the smallest ramp on the track template and ask the students to take turns rolling the cars or objects down the small ramp, then try with the bigger ramp.

- Use a pencil to mark where each car stopped. You can use different marker colors to represent the different cars or objects.
- Show the students how to record the result of each roll on their graphs. Make sure they understand that there is a separate graph for each ramp size.

Tip: Each student should have four different results graphs, one for each ramp. This is so they can compare how far the cars or objects will roll after going down each ramp.

Contemplate

Ask the students to predict how far a car or object will roll.

Consider asking questions like:

- Will it stop between numbers 3 and 4?
- Will it roll all the way past number 10?
- Were your predictions correct?
- Does it become easier to predict where the car or object will stop after observing or watching what happens a few times?

Continue

Consider asking questions like:

- How can you make a car go faster?
- How can you make a car roll farther?

Ask the students to build the large ramp that is shown on the inspiration card. (They will need to use the pieces from the smaller ramps.)

Tell the students to test the ramp by rolling cars down it, then challenge them to build a car that rolls past the number 10.

Tip: Use the inspiration photo of the larger vehicle.

Did You Notice?

Observing the following skills can help you monitor whether the students are developing the necessary competencies in science, technology, engineering, art, and math:

- Using technology such as simple gears and wheels in appropriate ways
- Asking questions about science and technology related concepts
- Making predictions.
- Experimenting/testing “what would happen if” questions
- Observing and describing what happens
- Recording data using graphs

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students clean up the LEGO® DUPLO bricks used and put them away.

Break-Snack and Restroom

Time: 20 minutes
Materials:

- Snack

Provide students with a time to use the restroom, wash hands and eat a snack. Snacks could be circus, carnival, or fair themed.

Let's Move: Grab the Brick

Time: 15 minutes
Materials:

- LEGO® DUPLO Bricks (Six-Bricks sets)

Create a pattern with one Six-Brick set. Place it at one end of the room with two partners. At the other end of the room have one Six-Brick set laying out. Each child takes a turn and runs across the room and brings back one brick. They put the bricks together to make the pattern.

> **Tip:** It is useful if you show the students that they need to get the bottom-color brick first and work their way up. This will help with organizing and strategy building.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students put the bricks together in the Six-Brick sets or clean up LEGO® DUPLO bricks used and put them away.

Let's Create: Create a Merry-Go-Round

Time: 15 minutes
Materials:

- Paper plates
- Paper cups
- Straws

- Pom poms
- Glue sticks
- Markers
- Construction paper
- Scissors
- Yarn
- Other age appropriate craft materials

Merry-Go-Rounds are fun rides at carnivals. Use various craft materials to have students create their own Merry-Go-Rounds. Inspirational pictures and directions can be found on many different internet sites; you can locate both with a quick internet search.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up! Place Merry-Go-Rounds in a safe location. Put craft materials away.

Let's Build: STEAM Activity 2 — Gears

Time: 30 minutes
Materials:

- LEGO® Education STEAM Park set
- Inspiration photo for Gears

In this lesson, students will learn about how gears work.

Notes for Teachers — The Science behind the Play
Gears are a rotating part of a machine with teeth that can interlock with another gear. The design of gears makes them able to transfer torque, or the force that causes the rotation.

Connect

1. Ask the students to find all of the elements that spin, and explain that spinning parts can be useful.
2. Tell the students gears are parts of a machine that are used to make other parts turn.
3. Have the students demonstrate how the spinning elements work, then ask them to line the gears up in a row and place them so that when they move one of the gears, all of the gears move.

Consider asking questions like:

- Which way do the gears turn?
- What happens when you interlock a large gear with a small gear?
- What happens when you interlock two gears of the same size?

Tell the students that you are going to read the beginning of a story about a group of people who are preparing STEAM Park for its daily visitors. You can show them the inspiration photo or use the figures to act out the scene.

Read the following story aloud:

"We need a new gate to make the park look nice and to control how many people enter the park at a time," said Parker, the park manager.
"I have some large gears in my garage. My dad brought them home from his factory and gave them to me. We could use them to build a new gate," Teresa said.
"Great idea! I also have some bricks and other pieces we could use," Parker said.

Tip: Interlocking gears in different ways causes them to move slower or faster and to turn clockwise or counterclockwise.

Construct

1. Show the students the inspiration photo for the Connect phase and ask them to identify which parts of the models move.
2. Ask them to build their own models of gates that open and close.

Contemplate

Ask the students to test their gates and make improvements.

Consider asking questions like:

- How do you make the gate open and close?
- Can a figure fit through the opening?

Continue

Ask the students to create a double gate that opens from the left and right so that both sides can be opened at the same time to allow more people to move through at one time.

Did You Notice?

Observing the following skills can help you monitor whether the students are developing the necessary competencies in science, technology, engineering, art, and math.

- Using technology such as simple gears and wheels in appropriate ways
- Asking questions about science and technology related concepts
- Experimenting/testing “what would happen if” questions
- Observing and describing what happens

Clean Up

Time: 3 minutes
Materials: None
Let’s clean up the bricks so we can use them again for another fun activity. Have students clean up the LEGO® DUPLO bricks used and put them away.

Let’s Celebrate the Day!

Time: 10 minutes
Materials:

- Student journals
- Crayons
- Markers
- Pencils

Have students draw a picture in their journal and include a word or two, if able, that shows their favorite moment from today!

Journal Page
Draw

Write

STEAM Park Carnival: Let's Play

Day 2

On the Water

Big Questions:

- What kind of fun things can you do with water at a carnival?
- What object float on water?
- What objects sink?
- How do objects move across water?

Materials:

- STEAM Park sets
- Six Brick DUPLO Sets Or LEGO® DUPLO bricks
- Books about fairs or carnival rides
- Chart paper
- Student journals (could be paper stapled together with students creating the outside of the journal using construction paper and other consumable materials). An example journal page is included at the end of Day 1 lesson plan.
- Various age appropriate craft materials
    - Crayons
    - Child safe Markers
    - Paper plates
    - Pom poms
    - Glue sticks
    - Construction paper
    - Scissors
    - Big googly eyes
    - Yarn

Day 2: Outline for the day

	Task	Time	Materials
Welcome	Welcome and Theme Guessing	5 min	• Pictures of objects floating, sinking and moving across water
	Program Rules and Expectations	5 min	• Group Rule Chart from Day 1
	Let's Share!	10 min	• Student journals
	Important message from the STEAM Park Manager	5 min	• None
	Wonderings	5 min	• Chart paper • Markers
Let's work together!	Snake Train	10 min	• Six-Brick sets or • LEGO® DUPLO Blocks
	Clean Up	3 min	• None
Circle Time: Stories and Songs	Book or story about boats, sailing, floating, sinking	10 min	• Books and songs about boats, sailing • Books and songs about objects that float or sink
	Songs about boats or other objects we ride on water	5 min	
Let's Build STEAM Activity 1	Moving on Water: Sink, Float and Sails	25 min	• STEAM Park set • Inspiration photos • Sails template • Results graph (choose best version for group) • Scissors • Hole punch • Colored pencils • Markers • A large container or sink filled with water • Straws and fans (optional)

			• Lamination machine (recommended)
Break	Snack and Restroom	20 min	• Snack
Let's Move	Crossing the River	15 min	• Six-Brick sets or • LEGO® Duplo Blocks
Let's Create	Make a Paper Sailboat	15 min	• Paper plates • Construction paper • Popsicle sticks • Scissors • Glue stick • Markers • Crayons
	Cleanup	3 min	
Let's Build STEAM Activity 2	Moving on Water: Let's Play a Game	25 minutes	• See materials for Activity 1
	Clean up	3 minutes	
Let's Celebrate the Day!	Journals	10 minutes	• Student journals • Crayons • Markers

Welcome

Time: 5 minutes
Materials:

- Pictures of objects floating, sinking and moving across water.

Welcome students back for the second day. Show students the pictures you have brought. Have them predict what you will be learning all about today.

Review group rules and expectations

Time: 5 minutes
Materials:

- Group Rules Chart from Day 1

Quickly review the group rules and expectations created on Day 1 by the students.
Highlight positive moments from Day 1 (times when students helped each other, asking great questions, teamwork, helping to clean up…)

Let's Share!
Time: 10 minutes
Materials:

- Student journals

Have students take a minute to look at their journals from the previous day. Have students share their favorite moments from the previous day with a partner.

Important Message from the Park Manager
Time: 5 minutes
Materials: None

> *Hello friends! Welcome back to the STEAM Park carnival. Yesterday, you helped learned all about how different objects move. That will be so helpful in rebuilding the rides for the STEAM Park Carnival. We have visitors to the STEAM Park carnival that enjoy riding boats. Our boats need to be repaired. Today, you are going to learn about objects that float and sink AND how we can design a sail to help a boat move across the water.*

Wonderings

Time: 5 minutes
Materials:

- Chart paper
- Markers

Questions to ask

- Did you know that some objects sink in water and others float?
- What do you know about how things move on water?
- What are you wondering?

Write down or draw pictures of what students know or are wondering about on the chart paper.

Let's Work Together: Snake Train
Time: 15 minutes
Materials:

- Six-Bricks sets

Have four students work together with 24 LEGO® DUPLO bricks and create a curved snake that they can move like a train across the floor without it coming apart. How long can it be? How fast can it move?

Clean Up
Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students put the bricks back together in the Six-Brick sets or clean up the LEGO® DUPLO bricks used and put them away.

Circle Time: Stories and Songs
Time: 15 minutes
Materials:

- Books about boats, sailing, objects that float or sink
- Songs about boats, sailing, objects that float or sink

Read a book about a boats, sailing, objects that float or sink to students.
Sing a song about boats, sailing or playing in the water.

Let's Build: STEAM Activity 1 — Moving on Water (Part 1: Sink or Float)
Time: 20 minutes
Materials (also used for Part 2 of the lesson later in the day):

- STEAM Park set
- Inspiration photos for Moving on Water
- Sails template
- Results graph (Choose the version that is most appropriate for your group and print one per child.)
- Hole punch
- Colored pencils or markers
- A large container or sink filled with water
- Straws and fans (optional)
- Lamination machine (recommended)

In this lesson, students will learn about how and why things float, and design and test sails.

Notes for Teachers — The Science behind the Play
Objects that float are positively buoyant and there are several reasons why they float. Objects that are less dense than water will float. Density refers to how close together the molecules of an object are. For example, most rocks sink in water because they are denser than water. Also, the surface (i.e., the outside of an object) that touches the water displaces it, or pushes it out of the way.

The shape of an object also affects how water moves around the object's surface. For example, the shape of a boat creates a large surface for water to push against. However, if too much weight is added to a boat, it will sink beneath the water.

Some objects are neutrally buoyant. This means that they sink beneath the water's surface, but they do not sink all the way to the bottom. This happens when an object's density is the same as the density of the water it is in.

Connect

1. Tell the students that you will be playing a game called sink or float.
2. Explain that they will have 10 seconds to choose an item from the room and bring it to you. Then, set a timer or count to 10 while the students choose their items.
3. As a group, sort the items into a "sink" pile and a "float" pile. Then. test the items in a container of water to see if the predictions were correct.
4. Ask the students to look at the elements in the STEAM Park set. Have students select some elements they believe will float, then test the items to see if their predictions were correct.
5. Consider recording the results of the tests on one of the printable graphs.

   Consider asking questions like:
   - What are the characteristics or features of objects that float?
   - What are the characteristics or features of objects that sink?
   - What would happen if you placed an object that sinks on top of an object that floats?

Break-Snack and Restroom
Time: 20 minutes
Materials:

- Snack

Provide students with a time to use the restroom, wash hands and eat a snack. Snacks could be circus, carnival or fair themed.

Let's Move: Cross the River
Time: 15 minutes
Materials:

- Six-Bricks sets or other LEGO® Duplo blocks

Note: The Source for this activity is *Care for Education: Six Bricks App.*

Directions:

1. Designate a “river” in the middle of the game space. You could use blue tape to mark the area.
2. Place students in groups of 4.
3. Split each group in half and give each group an animal name.
   The two groups stand at either end of the play area with their Six Bricks in a pile nearby.
4. On a signal, students attempt to move their bricks from one pile to the other – “across the river.” Bricks have to balance on any part of their body to get them across. Students cannot hold them in their hands. Students can move as many as they can balance, until at least 3 of their bricks have crossed the river.
   If bricks fall on the way across the river, they must go back to the start and begin again.

Clean Up

Time: 3 minutes

Materials: None

Let’s clean up the bricks so we can use them again for another fun activity in a little bit! Have students put the bricks back together in the Six-Brick sets or clean up the LEGO® DUPLO bricks used and put them away.

Let’s Create: Make a Paper Sailboat

Time: 15 minutes

Materials:

- Paper plates
- Construction paper
- Popsicle stick
- Scissors
- Glue stick
- Markers
- Crayons

You can find several examples of how to make a paper sailboat online through a quick internet search. You can also make one by cutting the paper plate in half. Glue the popsicle stick to the half paper plate to make the mast and then cut out construction paper sails. Students can decorate the boats with crayons and markers.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up! Place sail boats in a safe location. Put craft materials away.

Let's Build-STEAM Activity 2 — Moving on Water (Sail boat races)

Time: 30 minutes
Materials: (See Part 1 of Lesson)

Connect

Review the previously completed activity with sinking and floating.

Tell the students that you are going to read the beginning of a story about a group of people who are preparing STEAM Park for its daily visitors. You can show them the inspiration photo or use the figures to act out the story.

Read the following story aloud:

> *Arty, Teresa, Parker, and Ms. Engels were at STEAM Park early in the morning.*
> *Parker, the park manager, said, "I have four boats that park visitors could ride in. However, we need to find a way to make them move across the water."*
> *"Do you have some materials we can use to make some sails?" Teresa asked.*
> *"Great idea! What about markers to make colorful designs?" Arty asked.*
> *"Yes, I have a lot of supplies we could use! Let's get started!" Parker said.*

Construct

Encourage the students to think of ways to make boats and other floating objects move across the water. Show the students the inspiration photo for the "Moving on Water" lesson.

Give the students art supplies and printouts of the sail template, then ask them to create their own sails for the boats and test them.

Consider asking questions like:

- How can you make the boats move without touching them?
- What could we use to make "wind?"
- What would happen if you placed objects in the boat?
- What would happen if you dropped objects in the water around the boat?

Tip: Laminating the sails will make them stiffer and more durable. Using the boats without the figures makes them more stable.

Contemplate

Prompt a discussion about which sails work the best and why by asking the students to explain what happens when they use a sail to move a boat.

Consider asking questions like:

- Which sail makes the boat move faster?
- What would happen if you moved the sail to a different position?
- How far can you make the boat travel when you blow one breath of air into the sail?

Continue

Play a game using the boats by creating an obstacle course, a relay, or a race.

Place the balls and muffin cup elements in the water and tell the students to navigate around or between the obstacles. Another idea is to create teams and tell the students to create waves to try to sink the opposing team's boat.

Did You Notice?

Observing the following skills can help you monitor whether the students are developing the necessary competencies in science, technology, engineering, art, and math.

- Asking questions about science and technology related concepts
- Experimenting/testing "what would happen if" questions
- Making predictions
- Sorting and categorizing objects
- Observing and describing what happens
- Recording data using graphs or charts

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students clean up the LEGO® DUPLO bricks used and put them away.

Let's Celebrate the Day!

Time: 10 minutes

Materials:

- Student Journals
- Markers
- Colored Pencils
- Crayons

Draw a picture of how you feel when you learn something new.

STEAM Park Carnival: Let's Play

Day 3

Let's Play

Big Questions:

What kind of games do we play at a carnival? How can I make a game fair to play?

Materials:

- STEAM Park sets
- Six-Brick sets Or LEGO® DUPLO bricks
- Books about fairs or carnivals rides
- Chart paper
- Student journals
- Various age appropriate craft materials
    - Crayons
    - Child safe Markers
    - Paper plates
    - Pom poms
    - Glue sticks
    - Construction paper
    - Scissors
    - Big googly eyes
    - Yarn

Day 3: Outline for the day

	Task	Time	Materials
Welcome (30 min)	Welcome and Theme Guessing	5 min	• Object or picture related to a game
	Program Rules and Expectations	5 min	• Group Rule Chart
	Let's Share!	10 min	• None
	Important message from the STEAM Park Manager	3 min	• None
	Wonderings	5 min	• Chart paper • Markers

Let's work together!	Equal Numbers	10 min	• Six-Brick sets or • LEGO® DUPLO Bricks
	Clean Up	3 min	
Circle Time: Stories and Songs	Book or story about a game or game at a carnival or fair	10 min	• Book or story about a game or game at a carnival or fair
	Songs about playing games or a song that is a game	5 min	• Songs about playing games or a song that is a game
Let's Build STEAM Activity 1	Probability	25 min	• STEAM Park set • Inspiration photos • Results graph (print one per child) • Crayons or colored pencils.
	Clean Up	3 min	
Break	Snack and Restroom	20 min	• Snack
Let's Move	Simon Says	15 min	• Six-Brick sets or • LEGO® DUPLO Bricks
Let's Create	Maze and Pieces	15 min	• Crayons • Child-safe markers • Paper plates • Pom poms • Glue sticks • Construction paper • Scissors • Yarn
	Cleanup	3 min	
Let's Build STEAM Activity 2	Make a Fun Game!	30 min	
	Clean up	3 min	
Let's Celebrate the Day!	Journals	10 min	

Welcome

Time: 5 minutes
Materials:

- Picture or object that might be used in a game (e.g. dice, spinner, cards)

Welcome students back for the third day. Show students the item you have brought. Have them predict what you will be learning all about today.

Review group rules and expectations

Time: 5 minutes
Materials:

- Group Rules Chart from Day 1

Quickly review the group rules and expectations created on Day 1 by the students.
Highlight positive moments from Day 2 (times when students helped each other, asking great questions, teamwork, helping to clean up…)

Let's Share!

Time: 10 minutes
Materials: Student journals
What is your favorite game to play? Where do you play the game? Who do you like to play with? What do you like best about the game?

Important Message from the Park Manager

Time: 3 minutes
Materials: None

> *Hello friends! Welcome back to the STEAM Park carnival! We have worked so hard getting our rides and boats working this week. Thank you so much for the help. Today, I need you to help me with our games. Do you like to play games? I hope so. We will also investigate how we can make our games fair so everyone has a chance to win.*

Wonderings

Time: 5 minutes
Materials: Chart paper, markers
Have you played a game before? What do you already know about games? What are you wondering?

Write down or draw pictures of what students know or are wondering about on the chart paper.

Let's Work Together: Equal Number

Time: 15 minutes
Materials:

- LEGO® DUPLO Bricks

1. Count the number of studs (bumps) on a 2x2 brick. How many are all together? 4 studs
2. Count the number of studs (bumps) on a 2x4 brick. How many are all together? 8 studs
3. How many 2x2 bricks are needed to make a 2x4 brick? Two 2x2 bricks
4. Have students show other examples and build bricks together and count the studs.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students put the bricks back together in the Six-Brick set or clean up the LEGO® DUPLO bricks used and put them away.

Circle Time: Stories and Songs

Time: 15 minutes
Materials:

- Books and songs about games or carnival games

Read a book about a game.
Sing a song about a game or a song that is a game.

Let's Build: STEAM Activity 1 — Probability

Time: 20 minutes
Materials:

- STEAM Park set
- Inspiration photos for Probability
- Results graph (print one per child)
- Crayons or colored pencils

In this lesson, students will learn about probability, making predictions, and recording data.

Notes for Teachers: The Math behind the Play
Probability is a measure of how often a particular event will happen if something is done repeatedly. For example, the probability of a coin coming up heads is 1 out of 2.

Connect

Play a guessing game with the students. Tell them that you are thinking of a color, then ask them to guess which color you are thinking of.

Consider giving clues. Clues for the color red might include:

- The color I am thinking of is the color of a round fruit.
- The color I am thinking of is also the color of some roses.

When the students have guessed the color, ask how they figured it out. Explain that the more clues you have, the easier it is to guess the correct answer.

Select a red, yellow, and blue brick from the set and place them in front of you. Tell the students that you are thinking of one of the three colors and ask them to guess which color it is. When they have guessed the correct answer, ask them if it was easier or harder to guess the correct color in this game compared to the last game. Explain that in this game, they only had three colors they could guess. However, there were no clues given.

Tell the students that you are going to read the beginning of a story about a group of people who are visiting STEAM Park. You can show them the inspiration photo or use the figures to act out the scene.

Read the following story aloud:

Arty and Teresa were visiting STEAM Park with Arty's grandma, Ms. Engels. They saw their friend Parker, the park manager, operating the Spin to Win game.
"Step right up and spin to win! Which color do you think the wheel will land on?" Parker asked.
"I think it'll land on red because red is my favorite color!" Arty said.
"I think it'll land on turquoise because there are three turquoise spaces and only one red space, one yellow space, and one blue space," Teresa said.
"Ms. Engels, will you give the wheel a spin?" Parker asked.
Ms. Engels stepped up and spun the wheel with all of her strength.
Everyone watched as the wheel went round and round many times. It slowed down and ended up on the red space.
"Yes! Red is the best!" Arty cheered.
"Choose your prize from the red shelf!" Parker said.

Construct

Ask the students to look at the inspiration card of the wheel model and build it. Tell them that they will play a game using the wheel. Once the wheel is built, show the students that the flag at the top is the

pointer. Ask them which color they think the wheel will land on if someone spins it. Explain that this is a game of chance and that no one knows for certain where the wheel will stop.

Tell the students that they can try to predict where the wheel will stop by judging the power of the spin and the distance around the wheel, but that it is not possible to make a good prediction.

Give each student one of the results graphs and ask them to take turns spinning the wheel and guessing which color the wheel will land on. After each spin, tell the students to place a mark in the box next to the color the wheel landed on.

Contemplate

After spinning the wheel several times, ask the students to look at their graphs and count how many times the wheel landed on each color.

Consider asking questions like:

- Which color do you predict it will land on next?
- If you spin the wheel three times, how many times do you predict it will land on turquoise? Why?

Explain that there are more turquoise spaces on the wheel than other colors. This means there is a better chance or probability that the wheel will land on a turquoise space instead of one of the other colors.

Continue

Tell the students that they will be using the wheel to play another game. Explain that they will take turns spinning the wheel and that each time the spinner lands on a color, everyone will choose a brick or an element that is the same color. Tell them that the wheel will be spun five times and at the end, they will try to build a prize using the bricks they choose.

Did You Notice?

Observing the following skills can help you monitor whether the students are developing the necessary competencies in science, technology, engineering, art, and math.

- Making predictions
- Observing and describing what happens
- Recording data using graphs or charts
- Identifying numbers and counting quantities

Break-Snack and Restroom

Time: 20 minutes
Materials:

- Snack

Provide students with a time to use the restroom, wash hands and eat a snack. Snacks could be circus, carnival or fair themed.

Let's Move: Simon Says

Time: 15 minutes
Materials: None
Today's game is Simon Says. Every time you hear the words "Simon Says" followed by a command you must do it. Every time you hear a command but do not hear "Simon Says" you should not do it.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up from playing Simon Says!

Let's Create: Maze and Pieces

Time: 15 minutes
Materials:

- Various age appropriate craft materials
  - Crayons
  - Child safe Markers
  - Paper plates
  - Pom poms
  - Glue sticks
  - Construction paper
  - Scissors
  - Yarn

Draw or use yarn to create a maze or a path that someone would have to follow in a game. Make steps or squares and number them from 1 to 10. Now, make a game piece that fits in the steps or squares.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up! Place game pieces in a safe location. Put craft materials away.

Let's Build-STEAM Activity 2 — Make a Fun Game

Time: 30 minutes
Materials:

- STEAM Park set
- Maker Connect illustration
- Additional Inspirational Photo for Make a Cannon Game
- Various craft materials
- Construction paper
- String
- Rubber bands
- Feathers
- Glitter
- Sticky tape

The Great Cannon
Make a fun cannon game for Mr. Parker's booth.

Connect
Show the students the Maker Connect illustration of Mr. Parker's cannon game booth.
Discuss the things that you can see and how you might help Mr. Parker make a fun cannon game for his booth.
Ask the students if they have ever see a cannon game booth.
Talk about the different LEGO® bricks and other materials you could use to help Mr. Parker make a fun cannon game for his booth.

Construct
Encourage the students to tinker with the elements to see if any one sparks their interest and creativity.

Contemplate
Consider asking questions like:
- How can you make it safe for Mr. Parker and the guests?

- Will some targets be easy and some be more difficult to hit?
- Can guests score points or will they win a prize?
- Is your game fair to play?

Continue

Ask the students to take turns telling about the models they have made.

Consider asking questions like:

- What do you call the model you have built?
- How does your cannon game work?
- What does Mr. Parker do when guests come and try the game?
- How have you made it safe and fun for Mr. Parker?

Clean Up

Time: 3 minutes
Materials: None

Let's clean up the bricks so we can use them again for another fun activity. Have students clean up the LEGO® DUPLO bricks used and put them away.

Let's Celebrate the Day!

Time: 10 minutes
Materials:

- LEGO® Bricks
- Student journals

Who was kind to you today? What did they do? Draw a picture to show me.

STEAM Park Carnival: Let's Play!

Day 4

Helping Others

Students will learn about different ways we can design solutions to help our friends.

Big Question:

How can I help all friends enjoy the carnival?

Materials needed for the day:

- STEAM Park sets
- Six-Brick sets Or LEGO® DUPLO bricks
- Books about fairs or carnivals rides
- Chart paper
- Student journals
- Various age appropriate craft materials
    - Crayons
    - Child safe Markers
    - Paper plates
    - Pom poms
    - Glue sticks
    - Construction paper
    - Scissors
    - Big googly eyes
    - Yarn

Day 4: Outline for the Day

	Task	Time	Materials
Welcome (30 min)	Welcome and Theme Guessing	5 min	• A picture of a child helping another child.
	Program Rules and Expectations	3 min	• Group Rule Chart
	Let's Share!	10 min	• None
	Important message from the STEAM Park Manager	5 min	• None
	Wonderings	5 min	• Chart paper • Markers
Let's Work Together	Taking Turns	10 min	• Six-Brick sets or • LEGO® DUPLO bricks
	Clean Up	3 min	
Circle Time: Stories and Songs	Book or story about friends	10 min	• Books about friends, helping, or helping others. **Note:** There are also several good picture books related to inclusion of friends with special needs.
	Songs sung in rounds	5 min	• A song that can be sung as a duet or in a round
Let's Build STEAM Activity 1	A Machine for Mr. Bear	25 min	• STEAM Park set • Inspiration photo • Various age appropriate craft materials
	Clean Up	3 min	
Break	Snack and Restroom	20 min	• Snack
Let's Move	In Rhythm	15 min	• None
Let's Create	A Large Invitation	15 min	• Chart paper • Various age appropriate craft materials • Crayons • Child safe Markers
	Clean up	3 min	

Let's Build STEAM Activity 2	A Safe Ride for Mr. Bear	30 min	• STEAM Park set • Various age appropriate craft material
	Clean up	3 min	
Let's Celebrate the Day	Journals	10 min	• Student journals • Crayons • Markers

Welcome

Time: 5 minutes
Materials:

- A picture of a child helping another child.

Welcome students back for the fourth day. Show students a picture of a child helping another child.

Review group rules and expectations

Time: 3 minutes
Materials:

- Group Rules Chart

Quickly review the group rules and expectations created on Day 1 by the students.
Highlight positive moments from Day 3 (times when students helped each other, asking great questions, teamwork, helping to clean up…)

Let's Work Together

Time: 10 minutes
Materials:

- Student journals

What are 3 things you like to do with your friends? What is one more thing your friends like to do with you?

Important Message from the Park Manager

Time: 5 minutes
Materials: None

Hello friends! Welcome back to the STEAM Park carnival! We have learned so much this week! Today I have a very special request. My friend, Mr. Bear, would like to come and play at STEAM Park Carnival. Mr. Bear has trouble with walking. He has a special chair that helps him get from place to place. It is called a wheel chair. We need to make sure Mr. Bear can have fun at the carnival, too. I'm looking forward to your ideas on how we can help Mr. Bear!

Wonderings

Time: 5 minutes
Materials:

- Chart paper
- Markers

What do you know about helping friends with different needs?
What are you wondering?
Write down or draw pictures of what students know or are wondering about on the chart paper.

Let's Work Together: Taking Turns

Time: 15 minutes
Materials:

- LEGO® bricks

Everyone wants to ride the coolest rollercoaster; but, everyone needs to take turns. Build a way to have people move through a line to get on the ride one at a time.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students put the bricks back together in the Six-Brick sets or clean up the LEGO® DUPLO bricks used and put them away.

Circle Time: Stories and Songs

Time: 15 minutes
Materials:

- A song that can sang as a duet or in a round.
- Books about friends, helping, or helping others.

Note: There are also several good picture books related to inclusion of friends with special needs.
Read a book about helping others.
Sing a song as a duet or a round- singing together.

Let's Build: STEAM Activity 1 — A Machine for Mr. Bear

Time: 30 minutes
Materials:

- LEGO® Education STEAM Park set

- Maker Connect Illustration for A Machine for Mr. Bear
- Various age appropriate craft materials

Connect

Show the students the Maker Connect illustration of Mr. Bear in the wheelchair.
Discuss the things that you can see and how you might help Mr. Bear get up the stairs.
Ask the students if they have ever noticed how buildings or areas have secured wheelchair access.
Talk about the different LEGO® bricks and other materials you could use to help Mr. Bear get up the stairs.

Construct

Encourage the students to tinker with the elements to see if one sparks their interest and creativity.

Contemplate

Consider asking questions like:

- How can you make it safe for Mr. Bear?
- Is it easy for Mr. bear to get up the stairs using your model?
- What would make it fun for Mr. Bear?
- What would happen if Mr. Bear needed to get down the stairs?

Continue

Ask the students to take turns telling about the models they have made.

Consider asking questions like:

- What do you call the model you have built?
- What does Mr. Bear do when he needs to go up the stairs?
- How have you made it safe and fun for Mr. Bear?

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students clean up the LEGO® DUPLO bricks used and put them away.

Break-Snack and Restroom

Time: 20 minutes
Materials:

- Snack

Provide students with a time to use the restroom, wash hands and eat a snack. Snacks could be circus, carnival or fair themed.

Let's Move: In Rhythm

Time: 15 minutes
Materials: None
Have everyone stand in a row. Sing and do the movements for Head, Shoulders, Knees and Toes. Then, have everyone march, One, Two, Three, Four in a large circle. See if everyone can put their feet down at the same time. Right, Left, Right Left

Let's Create: A Large Invitation

Time: 15 minutes
Materials:

- Chart paper
- Various age appropriate craft materials
    - Crayons
    - Child safe Markers

Students work in groups of two to create a large invitation to come to the Amusement Park. They should draw some of the fun things you can do.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up! Place invitations in a safe location. Put craft materials away.

Let's Build: STEAM Activity 2 — A Safe Ride for Mr. Bear

Time: 30 minutes
Materials:

- LEGO® Education STEAM Park set
- Inspiration cards of rides from the STEAM Park set
- Various age appropriate craft materials

Connect

Discuss ways that you problem-solved Mr. Bear moving up and down the stairs in his wheel chair. How can make a STEAM Park Carnival Ride safe for Mr. Bear to get on and off the ride?

Construct

Have students select an inspiration card of a ride in the STEAM Park Carnival. Working together, have students design a safe way for Mr. Bear to get on and off the ride and be safe while riding.

Contemplate

Consider asking questions like:

- How can you make it safe for Mr. Bear?
- Is it easy for Mr. Bear to get on the ride using your model?
- What would make it fun for Mr. Bear?
- What would happen if Mr. Bear needed to get off the ride?

Continue

Ask the students to take turns telling about the models they have made.

Consider asking questions like:

- What do you call the model you have built?
- What does Mr. Bear do when he needs to get on this ride?
- How have you made it safe and fun for Mr. Bear?

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity. Have students clean up the LEGO® DUPLO bricks used and craft materials and put them away.

Let's Celebrate the Day

Time: 10 minutes

Materials:

- Student journals
- Markers
- Crayons

How do you feel when you help somebody else? Draw a picture to show me.

STEAM Park Carnival: Showtime!

Day 5

The Big Event

Students will create a carnival with rides and games.

Big Question:

How can we use STEAM Park to put on a show?

Materials:

- STEAM Park sets
- Pictures from the week.
- Group Rule Chart
- Wonder charts from Days 1-4
- Six-Brick sets or LEGO® DUPLO bricks
- Craft projects created this week
- Water area for students working on sail boats
- Snacks
- Music
- Various age appropriate craft materials
- Crayons
- Child-safe markers
- Construction paper
- Scissors
- Student built creations (rides and games)
- Certificates

Day 5: Outline for the Day

	Task	Time	Materials
Welcome (30 min)	Welcome and Week Wrap Up	5 min	• Pictures from the week
	Program Rules and Expectations	3 min	• Group Rule Chart
	Let's Share	5 min	• None
	Important message from the STEAM Park Manager	2 min	• None
	Wonderings	5 min	• Wonder charts from Days 1-4
Let's work together	Build a Bridge	15 min	• Six-Brick sets or • LEGO® DUPLO bricks
	Clean Up	3 min	
Let's Build STEAM Activity 1	The Big Event	60 min	• STEAM Park sets • Craft projects created this week • Water area for students working on sail boats
Break	Snack and Restroom	20 min	• Snacks
Let's Move	Welcome Dance	10 min	• Music
Let's Create	Tickets	15 min	• Various age appropriate craft materials • Crayons • Child safe Markers • Construction paper • Scissors
	cleanup	3 min	

Culminating Event Week 2	The Big Event!	30 min	• Student built creations (rides and games) • Tickets • Music
	Clean up	3 min	
Let's Celebrate the Week!	Certificates	10 min	• Certificates

Welcome

Time: 5 minutes
Materials:

- Pictures from the week.

Welcome students back for the last day of STEAM Park Let's Play program. Take a minute to share some of the pictures you have with students. Explain to students that today is the Big Event. Provide students with a good overview of what the day will look like since it will be a little different from other days.

Review group rules and expectations

Time: 3 minutes
Materials: Group Rules Chart
Quickly review the group rules and expectations created on Day 1 by the students.
Highlight positive moments from Day 4 (times when students helped each other, asking great questions, teamwork, helping to clean up…)

Let's Share

Time: 5 minutes
Materials: None
What are you most excited about to share at the end of the program? Share with your partner.

Important Message from the Park Manager

Time: 2 minutes
Materials: None

> *Hello friends! Welcome back to the STEAM Park carnival. You have learned so much this week. Today is the BIG EVENT! We are going to rebuild the STEAM Park Carnival. What do you think we need to include? Rides? Games? We also need to make sure Mr. Bear can have fun, too. What do you remember about this week?*

Wonderings

Time: 5 minutes
Materials:

- Wondering charts from the week

Let's look at all the different things we have wondered about when thinking about different parts of a carnival. Are there things you are still wondering about? How could I learn more about the things I wonder about?

Let's Work Together: Build a Bridge

Time: 15 minutes
Materials:

- Six-Brick sets or LEGO® DUPLO bricks

Four students work together to build a bridge that they can crawl or wiggle under. Students can hold the sides of the bridge so it doesn't easily fall.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up the bricks so we can use them again for another fun activity in a little bit! Have students put the bricks back together in the Six-Brick sets or clean up the LEGO® DUPLO bricks used and put them away.

Let's Build: STEAM Activity — The Big Event

Time: 60 minutes
Materials:

- STEAM Park set
- Inspiration photo
- Various age appropriate craft materials
    - Construction paper
    - Feathers
    - Tape
    - Pipe cleaners

Connect

Ask students to share all of the different things they have learned this week!

- What did we learn about how objects move?
- What did we learn about how objects move on water?

- What did we learn about how to make games fair?
- What did we learn about helping friends, like Mr. Bear?

Today we are going to put together all of the different things we have learned about

Decide if your group wants to build:

- A ride
- A game
- A water ride

Make sure Mr. Bear can participate in whatever you create.

NOTE: If you are combining the two weeks of STEAM Park Carnival, you could also have students create items from the previous week. Things to consider include places to eat, performances, and an animal area.

Construct

Have students work to build the different parts for the STEAM Park's Big Event. It is ok if they build something they built earlier or build something new.

Contemplate

Ask students if there are parts they have forgotten to include. What else should we build?

Continue

Have student put their builds together.
Place the STEAM Park show in a safe location in the classroom to share with visitors.

Break-Snack and Restroom

Time: 20 minutes
Materials:

- Snack

Provide students with a time to use the restroom, wash hands and eat a snack. Snacks could be circus, carnival or fair themed.

Let's Move: Welcome Dance

Time: 10 minutes
Materials:

- Upbeat Music

We need a welcome dance for our guests at the park. Choose some actions that we can put together to create a cool dance. For example, shake your hands in the air, put your right foot out and back, jump in place, etc.

Let's Create: Tickets

Time: 15 minutes
Materials:

- Various age appropriate craft materials
    - Crayons
    - Child safe Markers
    - Construction paper
    - Scissors

Students create tickets that can be used at the amusement park. They can create different types of tickets for rides, food, crafts, etc.

Clean Up

Time: 3 minutes
Materials: None
Let's clean up. Put craft materials away.

The Big Event

Time: 30 minutes
Materials:

- Various pictures from the week
- Crafts students created
- The STEAM Park Big Event created earlier in the day.

Invite visitors to come and see what you have learned. For extra fun, you could serve child friendly carnival snacks.

Clean Up

Time: 3 minutes
Materials: None
Now that are show is over, we need to clean up our materials. Let's put the bricks away and throw away any garbage in the room.

Send home any consumable student craft creations with students.

Let's Celebrate the Day!

Time: 10 minutes

Materials:

- Certificates

Have students share their favorite thing from STEAM Park Carnival Let's Play Program. Present students with a certificate of completion.