unit 3

Make it Go!
What is a galimoto? How can we make toys move?

How can the direction and speed of a toy be changed?

Why do humans make things?

What can we observe about a push?

What must happen in order to change the direction or speed of the toy?

How do we make a galimoto?

What do we need to know to make a galimoto?

What can we observe about a pull?

How are we being engineers when we make a galimoto?
## Unit 3 Teacher Preparation List

<table>
<thead>
<tr>
<th>Lesson</th>
<th>Inside MySci kit, you’ll find:</th>
<th>Items you must supply:</th>
<th>Extra prep time needed:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Lesson 1</strong></td>
<td>Paper bag containing 1 of each of the following: Plastic spoon, Seashell, Paper clip, Pencil, Stone, Toothbrush, Bone replica, Feather</td>
<td>Science notebooks &amp; Internet access</td>
<td>Review MySci Safety Guidelines, Copy and administer pre-assessment, Copies of the Engineering Design Cycle (Appendix i)</td>
</tr>
<tr>
<td><strong>Lesson 2</strong></td>
<td><em>Galimoto</em>, by Karen Lynn Williams</td>
<td>Science notebooks &amp; Internet access, Chart paper</td>
<td>Copies of the Engineering Design Cycle (Appendix i)</td>
</tr>
<tr>
<td><strong>Lesson 3</strong></td>
<td><em>Motion</em>, by Darlene R. Stille. <em>Give it a Push! Give it a Pull!</em>, by Jennifer Boothroyd 6 sets of 1 each: ping pong ball, marble, top and wooden wheel 6 sets of push pull cards</td>
<td>Science notebooks &amp; Internet access</td>
<td>Copies of Push Activity sheet (Appendix ii)</td>
</tr>
<tr>
<td><strong>Lesson 4</strong></td>
<td><em>The Enormous Turnip</em>, by Alexei Tolstoy 6 sets of 1 stroller, 1 sled and 1 wagon to add to the previous lesson’s materials 6 sets of 4 magnets, 1 cut string, 1 rubber band and 1 feather 6 sets of push pull cards from previous lesson</td>
<td>Science notebooks</td>
<td>Copies of Pull Activity sheet (Appendix iii)</td>
</tr>
<tr>
<td><strong>Lesson 5</strong></td>
<td></td>
<td>Science notebooks &amp; Internet access, Chart paper</td>
<td>Copies of the Position Activity (Appendix iv), Toys from home or from the kit, if a child has forgotten to bring a toy from home.</td>
</tr>
<tr>
<td><strong>Lesson 6</strong></td>
<td>1 pack of kid–friendly wire, 12 dowels, 24 wheels, 1 pack pipe cleaners <em>Galimoto</em>, book from previous lesson</td>
<td>Students’ drawings from their science notebooks of a galimoto, Extra material from home for galimoto</td>
<td>Copies of the Engineering Design Cycle (Appendix i), Copy and administer post-assessment</td>
</tr>
</tbody>
</table>
Lesson 1: Why do humans make things?

LEARNING TARGET
Demonstrate that designed objects can solve problems.

SUMMARY
Students will explore items and decide whether they are engineered or natural.

ENGAGE
Tell the class: I have some items in this bag. I am going to hold one up at a time. Can you tell me what it is? Go through each item in the bag rather quickly.

EXPLORE
Organize students in groups of 4. Give each group one item from the bag. Ask students to decide if the object was made by humans or is a natural object.

EXPLAIN
Have each group share its object with the class. Members should say why they think it is a natural object or made by humans.

ELABORATE
Ask the groups with human-made objects to identify what they are used for. Ask them who made the objects and how they made them. Humans who make things that we need or want are called engineers, and use a special process to design and make those objects. Watch the video Who is an Engineer? http://www.youtube.com/watch?v=1jxtbf-f4W0

Ask the class: Do you think engineers got it right the first time they tried to make something? Why or why not? Lead the conversation to the fact that it takes many tries and collaboration to make something work. Show and discuss the engineering design poster.

EVALUATE
Ask students to name other objects that are made by humans and draw one in their science notebook.

MYSCI MATERIALS:
Paper bag containing 1 of each of the following:
- Plastic spoon
- Seashell
- Paper clip
- Pencil
- Stone
- Toothbrush
- Bone replica
- Feather

TEACHER PROVIDES:
- Science notebooks
- Internet access
- Copies of the Engineering Design Cycle (Appendix i)

Teaching Tip:
This icon highlights an opportunity to check for understanding through a formal or informal assessment.
Lesson 2: What do we need to know to make a galimoto?

LEARNING TARGET
Identify the moving part of a toy vehicle.

SUMMARY
After hearing story of an African child who made a push toy, students will discuss what they need to know to make one.

ENGAGE
Ask the class: What kinds of toys do you have at home? Make a list on a chart paper.

EXPLORE
Ask students: Have you made a toy before or played with a toy made by someone you know? Listen to a few responses.

EXPLAIN
Ask the class: What if you had to make your own toys? Read Galimoto. How is the boy like an engineer? What steps of the engineering cycle did he follow? You can also watch this Reading Rainbow video of the book:
https://www.youtube.com/watch?v=-LIBQI3aHhQ.

ELABORATE
Ask the class: What kinds of materials would we need to make a galimoto, and what would we need to learn? Make 2 lists on chart paper, one for materials and one for what we need to know.

Engineering Connection: Ask: How are we like engineers? What step of the engineering cycle are we on now? We have identified the need, and we are brainstorming what we might need.

EVALUATE
Ask the class: Think of a toy you have at home that has wheels. Can you try drawing it in your science notebook? Draw an arrow at the part that moves.

MYSCI MATERIALS:
Galimoto, by Karen Lynn Williams

TEACHER PROVIDES:
Science notebooks
Internet access
Chart Paper
Engineering Design Cycle (Appendix i)

Teaching Tip:
The t-chart should include items like: string, wheels, sticks, wire, etc for Materials. For What We Need to Learn, list concepts like how things move, how to put things together, how to test to see if they work, etc.
Lesson 3: What can we observe about a push?

LEARNING TARGET
Explain how a push can move an object away.

SUMMARY
Students will explain what a push is through demonstration, exploration, and illustration.

ENGAGE
Tell the class: In our last lesson we talked about how we needed to learn more about how things move before we make our own galimoto. This might help us with our toy design.

Pass out bags of toys to the groups. Tell them to take out the ping-pong ball. (Show what it is, and discuss what it is.) Ask: What are some ways that a ball might go from one friend to another? With your group, take turns moving the ping-pong ball from one person to the next. Describe the ways you moved the ball to a friend.

EXPLORE
Tell the class: Now, let’s look at what else in in the bag. Hold up each toy and ask if anyone knows what it is, and discuss. Ask: How many different ways can we make these toys in the bag (ball, marble, toy car, top) move? Have the groups explore the objects.

EXPLAIN
Ask students to describe the different ways they moved the toys. Record them on chart paper. Read the book Motion, by Darlene R. Stille and/or Give it a Push! Give it a Pull!, by Jennifer Boothroyd. Review these learning targets with the students:

• A force is needed to start the push.
• A push can be called many things (toss, roll, slide, throw, etc.) but it is a push because it moves away from the body.
• It doesn’t matter how fast or slow the push is.
• Force is needed to start a push.
• Force is needed to stop a push.
• Pull/push are opposites.

MYSCI MATERIALS:
Motion, by Darlene R. Stille.
Give it a Push! Give it a Pull!, by Jennifer Boothroyd
6 sets of 1 each: ping pong ball, marble, top and wooden wheel
6 sets of push pull cards

TEACHER PROVIDES:
Science notebooks
Internet access
Copies of Push Activity sheet (Appendix ii)

Teaching Tip:
Engage, Explore and Explain could be 1 session. The Elaborate and Evaluate could be another session.

Teaching Tip:
Remind students that they must keep the ball on the table or desk, or on the designated spot on the carpet.
Listen for words such as “roll, toss, bounce, slide, throw.”

Teaching Tip:
The chart might look something like this:
ball-rolled, bounced
marble-rolled
top-spun, twirled
toy car-rolled, went fast

Teaching Tip:
Ask students to compare what they saw in the book with the lists they compiled.
“Run, roll, fly, slide, crawl” are some possibilities.
Informally evaluate students during reading of story. Observe partners and groups re-enactments of story.
Lesson 3 continued: What can we observe about a push?

ELABORATE
Tell the class: *We are going to reread the book, and this time we are going to look for times when something was pushed. Examples include the girl pushed with her feet to run, the girl pushed the swing, someone pushed the ball, etc. What is needed for an object to have a push?* Ask students to demonstrate different ways one can push an object.

Show Melcombe Primary’s Push and Pull in Reception:
Push and Pull: www.youtube.com/watch?feature=related&v=URSmaBRnTPs

EVALUATE
Ask the class: *How can we communicate how we push an object? How do we know that an object has been pushed?* *(It has moved.)*

Using the groups from the Explore section of this lesson, pass out the push and pull cards. Ask the students to identify which cards show a push. Then pass out the Push Activity Sheet (Appendix ii) and have the students complete.

Teaching Tip:
The following cards show the pushes: man with a shopping cart, mom with stroller, basketball boy, soccer girl, man and piano, girl on bike, man vacuuming and the bulldozer.
Lesson 4: What can we observe about a pull?

LEARNING TARGET
Identify that objects that can be pulled move towards you.

SUMMARY
Students will explain what a pull is through demonstration, exploration, and illustration.

ENGAGE
Remind students of the activities done in Lesson 2. Have students recall vocabulary words learned (push/force). They should demonstrate what a push is (push is when you move an object away from you) and explain what force is (energy or what you have to do for something to move away or to you). Show the students the stroller, sled and wagon and discuss. Tell the class: Today, we have some different items in our bag to explore. Can you guess what these are? How do they work? With your group, take turns moving them to you from a partner. Describe the ways you moved the object to yourself.

EXPLORE
Ask the class: What do you use to move the toy from your partner to yourself? After students demonstrate to each other, the group will describe how the object was moved.

EXPLAIN
Ask students to describe the different ways they moved the toys (pulled it, tugged on the handle, etc). Record them on chart paper. Read The Enormous Turnip. Ask the students to raise their hand every time they hear the word “pull”.

ELABORATE
Ask the class: Is there another way to have an object come to you without you touching it?
Pass out the magnets, feathers, and string to each group. Have the students experiment with the magnets. Have them try to use the magnets, strings and feathers to get the toys to move without touching them. They can try to see if the toys are magnetic or they can try tying a string to an object and pulling it. Or they can try to fan the feather to get an object to roll.

EVALUATE
Ask the class: How can we communicate how we push or pull an object? Pass out the Pull Activity Sheet (Appendix iii) and have the students fill them out.
You might have to review some of the words on the paper with the students. Look for motion going towards the child. It might be good to remind them to use arrows in their drawings to show the direction the force is moving. Use the Push/Pull cards to identify which cards show a pull. Hold up each one and have the students say either “push” or “pull”.

MYSCI MATERIALS:
The Enormous Turnip, by Alexei Tolstoy
6 sets of 1 toy stroller, 1 toy sled and 1 toy wagon to add to the previous lesson’s materials
6 sets of 4 magnets, 1 cut string 1 rubber band and 1 feather
6 sets of push pull cards from previous lesson

TEACHER PROVIDES:
Science notebooks
Copies of Pull Activity sheet (Appendix iii)

Homework:
Students are to bring a toy with wheels from home for Lesson 5.

Teaching Tip:
Engage, Explore and Explain could take one session. Elaborate could be 1 session and Evaluate another.

Teaching Tip:
Remind students that they must keep the objects used on the table, desk, or designated spot on the carpet. Also remind them that no objects should be put in their mouths, either! Look for words such as “pull, tug, drag,

Teaching Tip:
The Enormous Turnip also could be read as an introduction to a lesson on plants and vegetables or for working together in groups to get one thing accomplished more easily.

Teaching Tip:
If no one mentions it, this is when a “magnetic force” can be introduced. Let the students explore with the magnets and explain what they see and what they are doing. Let the students experiment with pulling different materials to towards them. Again, remind students not to put anything in their mouths!

Teaching Tip:
The cards that show pulls include: girl pulling wagon, boy doing chin-ups, horse pulling wagon and woman pulling weeds.
Lesson 5: What must happen in order to change the direction or speed of the toy?

LEARNING TARGETS
Demonstrate that objects change position when they are pushed or pulled.

SUMMARY
Students will explain the differences between a push and pull through demonstration, exploration, and illustration. Students also will explain why some objects go farther than others.

ENGAGE
Tell the class: In the last couple of lessons, we discussed the difference between a push and a pull. Today we are going to investigate how we can change that push or pull. Watch me, and describe the ways I move this toy.

Direct the students: Let's look at the toys you brought from home. Can any of them move on their own after you give them a push or a pull? Let each student show their toy to the class and how they can make it move, then sort the toys into different categories based on how they move, push, pull or can’t move.

EXPLORE
Ask the class: How many different ways can you make your toy from home move? Can you make it change direction? What do you have to do? Describe some of the ways you moved your object. What did you have to do?

Have students work with partners and take turns moving their objects and describing the movements.

EXPLAIN
Ask a few students to describe and demonstrate the different ways they moved the toys. Record them on chart paper. Highlight “hard push, soft”, etc.

Show Thomas the Train Pushes and Pulls: https://www.youtube.com/watch?v=hmBdy-_LI6I

ELABORATE
Ask the class: How might have the train in the movie avoided crashing into the other trains or the pond? Can you draw it in your science notebook? (Look for the trains slowing down)

MYSCI MATERIALS:
6 sets of push pull cards from previous lesson

TEACHER PROVIDES:
Copies of the Position Activity (Appendix iv)
Science notebooks
Internet access
Chart paper
Toys from home or from the kit, if a child has forgot to bring a toy from home

Teaching Tip:
Use a toy from the kit (maybe the toy wagon) or something brought from home to demonstrate for students. For example, tug on the handle of the wagon and ask the students what you did or ask students to tell you what to do to get the wagon to come towards you. (Pull harder or give it more force).

Teaching Tip:
If a child forgot his toy, have him use one from the class sets.

Teaching Tip:
Ask these questions after showing Thomas the Train:
1. Does Thomas and his friends pull or push the trains? (They can do both, depending on where they are put.)
2. Why did Thomas’s friend slide into the pond? (He was going too fast and could not turn. You must change the amount of force you use to change direction or speed of an object.)
Lesson 4 continued: What must happen in order to change the direction or speed of the toy?

EVALUATE

☑ Ask students to pick one toy for this demonstration. Ask them to show you:
  • A pull
  • A push
  • A hard pull
  • A soft push
  • A change in direction
  • A change in force changes the speed or direction of the object.

Have the student complete the Position Activity (Appendix iv).
Lesson 6: How are we being engineers when we make a galimoto?

LEARNING TARGET
Use the engineering design cycle to design, test and redesign a galimoto.

SUMMARY
Students will design, create, test and redesign their galimotos.

MAKING THE GALIMOTOS
Tell the class: Today we are going to start making the galimotos! Let’s go back to our engineering design poster. What steps have we already gone through? What steps do we still need to do? Read the chart with the students. Review how the students are going to do each step of the cycle. First, let me show you how to thread the wire through the wheels. (Demonstrate).

Engineering Connections:
Using the wire and found materials, students begin forming their galimotos.

Have students test their galimotos at different stages to make adjustments.

Have the students demonstrate a push, pull and changing directions or speed with their galimoto.

Have each child show and discuss his galimoto.

Ask the children if there is anything they want to change to make their galimotos better.

Review how they completed the Engineering Design Cycle (Appendix i).

MYSCI MATERIALS:
1 pack of kid-friendly wire
12 dowels
24 wheels
1 pack pipe cleaners
Galimoto, book from previous lesson

TEACHER PROVIDES:
Students’ drawings from their science notebooks of a galimoto
Extra material from home for galimoto
Engineering Design Cycle (Appendix i)

Teaching Tip:
It is important to do this lesson over at least 2 different sessions so the students can experience redesigning their galimoto to work better. If possible have the students draw their different design ideas.

Teaching Tip:
Make sure that students know that they can choose to use one, two or three wheels.
NGSS PERFORMANCE EXPECTATIONS

K-PS2-1
Plan and conduct an investigation to compare the effects of different strengths or different directions of pushes and pulls on the motion of an object.

K-PS2-2
Analyze data to determine if a design solution works as intended to change the speed or direction of an object with a push or a pull.

K-2-ETS1-1
Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool.

K-2-ETS1-2
Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.

K-2-ETS1-3
Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.

Key to Understanding the NGSS Codes

NGSS codes begin with the grade level, then the “Disciplinary Core Idea code”, then a standard number. The Disciplinary Core Ideas are:

Physical Sciences
PS1: Matter and its interactions
PS2: Motion and stability: Forces and interactions
PS3: Energy
PS4: Waves and their applications in technologies for information transfer

Life Sciences
LS1: From molecules to organisms: Structures and processes
LS2: Ecosystems: Interactions, energy, and dynamics
LS3: Heredity: Inheritance and variation of traits
LS4: Biological evolution: Unity and diversity

Earth and Space Sciences
ESS1: Earth’s place in the universe
ESS2: Earth’s systems
ESS3: Earth and human activity

Engineering, Technology, and Applications of Science
ETS1: Engineering design
ETS2: Links among engineering, technology, science, and society

For more information, visit http://www.nextgenscience.org/next-generation-science-standards
### SCIENCE AND ENGINEERING PRACTICES

#### Asking Questions and Defining Problems
- Ask questions based on observations to find more information about the natural and/or designed world(s).
- Define a simple problem that can be solved through the development of a new or improved object or tool.

#### Developing and Using Models
- Compare models to identify common features and differences.

#### Planning and Carrying Out Investigations
- With guidance, plan and conduct an investigation in collaboration with peers (for K).
- Plan and conduct an investigation collaboratively to produce data to serve as the basis for evidence to answer a question.
- Make observations (firsthand or from media) and/or measurements to collect data that can be used to make comparisons.
- Make predictions based on prior experiences.

#### Analyzing and Interpreting Data
- Record information (observations, thoughts, and ideas).
- Use and share pictures, drawings, and/or writings of observations.
- Compare predictions (based on prior experiences) to what occurred (observable events).

#### Constructing Explanations and Designing Solutions
- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena.
- Use tools and/or materials to design and/or build a device that solves a specific problem or a solution to a specific problem.
- Generate and/or compare multiple solutions to a problem.

### DISCIPLINARY CORE IDEAS

#### Forces and Interactions: Pushes and Pulls
**PS2.A: Forces and Motion**
- Pushes and pulls can have different strengths and directions. (KPS2-1),(K-PS2-2)
- Pushing or pulling on an object can change the speed or direction of its motion and can start or stop it. (K-PS2-1),(K-PS2-2)

**PS2.B: Types of Interactions**
- When objects touch or collide, they push on one another and can change motion. (K-PS2-1)

**PS2.C: Relationship Between Energy and Forces**
- A bigger push or pull makes things speed up or slow down more quickly. (secondary to K-PS2-1)

**ETS1.A: Defining Engineering Problems**
- A situation that people want to change or create can be approached as a problem to be solved through engineering. Such problems may have many acceptable solutions. (secondary to KPS2-2)

### CROSSCUTTING CONCEPTS

#### Patterns
- Patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

#### Cause and Effect: Mechanism and Prediction
- Events have causes that generate observable patterns.
- Simple tests can be designed to gather evidence to support or refute student ideas about causes.

#### Scale, Proportion, and Quantity
- Relative scales allow objects and events to be compared and described (e.g., bigger and smaller; hotter and colder; faster and slower).

#### Systems and System Models
- Objects and organisms can be described in terms of their parts.
- Systems in the natural and designed world have parts that work together.

#### Energy and Matter: Flows, Cycles, and Conservation
- Objects may break into smaller pieces, be put together into larger pieces, or change shapes.

#### Structure and Function
- The shape and stability of structures of natural and designed objects are related to their function(s).

#### Stability and Change
- Some things stay the same while other things change.
- Things may change slowly or rapidly.
# MISSOURI GLE STANDARDS

## Key to Understanding the GLE Codes

GLE codes are a mixture of numbers and letters, in this order: Strand, Big Idea, Concept, Grade Level and GLE Code.

The most important is the strand. The strands are:

1. **ME**: Properties and Principles of Matter and Energy
2. **FM**: Properties and Principles of Force and Motion
3. **LO**: Characteristics and Interactions of Living Organisms
4. **EC**: Changes in Ecosystems and Interactions of Organisms with their Environments
5. **ES**: Processes and Interactions of the Earth's Systems (Geosphere, Atmosphere and Hydrosphere)
6. **UN**: Composition and Structure of the Universe and the Motion of the Objects Within It
7. **IN**: Scientific Inquiry
8. **ST**: Impact of Science, Technology and Human Activity

For more information, visit [http://dese.mo.gov/college-career-readiness/curriculum/science](http://dese.mo.gov/college-career-readiness/curriculum/science)

<table>
<thead>
<tr>
<th>Concepts</th>
<th>GLE Standards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Kindergarten</strong></td>
<td><strong>First Grade</strong></td>
</tr>
<tr>
<td>FM 1 A K a</td>
<td>FM 1 A 1 a</td>
</tr>
<tr>
<td>Describe an object's position relative to another object (e.g., above, below, in front of, behind)</td>
<td>Compare the position of an object relative to another object (e.g., left of or right of)</td>
</tr>
<tr>
<td>FM 2 A K a</td>
<td>FM 1 A 1 c</td>
</tr>
<tr>
<td>Identify ways (push, pull) to cause some objects to move by touching them</td>
<td>Compare the speeds (faster vs. slower) of two moving objects</td>
</tr>
<tr>
<td>IN 1 A K a</td>
<td>FM 2 A 1 a</td>
</tr>
<tr>
<td>Pose questions about objects, materials, organisms and events in the environment</td>
<td>Identify the force (i.e., push or pull) required to do work (move an object)</td>
</tr>
<tr>
<td>IN 1 A K b</td>
<td>FM 2 D 1 a</td>
</tr>
<tr>
<td>Conduct a simple investigation (fair test) to answer a question</td>
<td>Describe ways to change the motion of an object (i.e., how to cause an object to go slower, go faster, go farther, change direction, stop)</td>
</tr>
<tr>
<td>IN 1 B K a</td>
<td></td>
</tr>
<tr>
<td>Make qualitative observations using the five senses</td>
<td></td>
</tr>
<tr>
<td>IN 1 C K a</td>
<td></td>
</tr>
<tr>
<td>Use observations as support for reasonable explanations</td>
<td></td>
</tr>
<tr>
<td>IN 1 C K b</td>
<td></td>
</tr>
<tr>
<td>Use observations to describe relationships and patterns and to make predictions to be tested</td>
<td></td>
</tr>
<tr>
<td>IN 1 C K c</td>
<td></td>
</tr>
<tr>
<td>Compare explanations with prior knowledge</td>
<td></td>
</tr>
<tr>
<td>IN 1 D K a</td>
<td></td>
</tr>
<tr>
<td>Communicate observations using words, pictures, and numbers</td>
<td></td>
</tr>
<tr>
<td>ST 1 A K a</td>
<td></td>
</tr>
<tr>
<td>Observe and identify that some objects occur in nature (natural objects); others have been designed and made by people</td>
<td></td>
</tr>
<tr>
<td>ST 1 B K a</td>
<td></td>
</tr>
<tr>
<td>Describe how tools have helped scientists make better observations (i.e., magnifiers)</td>
<td></td>
</tr>
<tr>
<td>ST 3 A K a</td>
<td></td>
</tr>
<tr>
<td>Identify a question that was asked, or could be asked, or a problem that needed to be solved when given a brief scenario (fiction or nonfiction of individuals solving everyday problems or learning through discovery)</td>
<td></td>
</tr>
<tr>
<td>ST 3 A K b</td>
<td></td>
</tr>
<tr>
<td>Work with a group to solve a problem, giving due credit to the ideas and contributions of each group member</td>
<td></td>
</tr>
</tbody>
</table>
Engineering Design Cycle

Lessons 1, 2 & 6

1. Identify Need/Problem
2. Research & Brainstorm
3. Choose Best Ideas
4. Construct Prototype
5. Test & Evaluate
6. Communicate
7. Redesign
Push

Section 2, Lesson 3

1. Draw your toy:

1. Can you make it:

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roll</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bounce</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Twirl</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pull

Section 2, Lesson 4

1. Draw your toy:

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1. Can you make it:

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tug</td>
<td></td>
</tr>
<tr>
<td>Drag</td>
<td></td>
</tr>
<tr>
<td>Draw to you</td>
<td></td>
</tr>
<tr>
<td>Twirl</td>
<td></td>
</tr>
<tr>
<td>Attract</td>
<td></td>
</tr>
</tbody>
</table>
Position Activity
Section 3, Lesson 5

1. The ___ is _____ the _____.
2. The ___ is ________________ the _____.
3. The ___ is ____ the _____.
4. The ___ is __________ the _____.
5. The ___ is __________ the _____.
6. The ___ is __________ the _____.
7. The ___ is __________ the _____.

WORD BANK:
on
between
in
behind
next to
under
above
Vocabulary Words

All Sections and Lessons

RECOMMENDATION
We recommend that students participate in investigations as they learn vocabulary, that it is introduced as they come across the concept. MySci students work collaboratively and interact with others about science content also increasing vocabulary. The hands-on activities offer students written, oral, graphic, and kinesthetic opportunities to use scientific vocabulary and should not be taught in isolation.

push
pull
force
galimoto
technology
engineer
fast
slow
hard
soft
behind
in front
beside