# Playground Design

3.5


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## Anchoring Phenomenon

Objects move in different ways during physical activities on the playground.

## Lesson Concept

Using the characteristics of forces and their effects on motion, design a solution for a new piece of playground equipment or game.

## Identified Problem

A school can't reopen the playground until it receives a design for a new playground structure.

## Standards

Refer to Appendix 3.5 for NGSS, CCSS—ELA, and California ELD standards.

## Storyline Link

This is the culminating lesson in the learning sequence. This lesson introduces the concepts of engineering design and the use of the knowledge gained about forces and motion to solve a problem. The previous lessons had students constructing explanations and models about the cause and effect of forces by observing patterns and collecting data from their investigations. Students will use this information to design and construct a new playground activity or piece of equipment to solve the problem of replacing an old, unusable playground structure.

Throughout the unit, a flag (▶) denotes formative assessment opportunities where you may change instruction in response to students' level of understanding and making sense of phenomena or solving a problem.

## Time

### 5.75–7.0 hours (5–10 days to complete)

| | | |
|---|---|---|
| Part I | 60 minutes | Engage |
| Part II | 60 minutes | Explore 1 |
| Part III | 60–120 minutes | Explore 2 |
| Part IV | 60 minutes | Explain |
| Part V | 60 minutes | Elaborate |
| Part VI | 45–60 minutes | Evaluate |

## Materials

### Whole Class

- ❑ 3.1.R1: Design a Playground (from Lesson 1: Movement on the Playground)
- ❑ 3.5.R1: Map of New Playground
- ❑ 3.5.R2: EiE Engineering Design Process
- ❑ 3.5.R3: NGSS Engineering Design Process
- ❑ 3.5.R4: Criteria and Constraints
- ❑ Rulers
- ❑ Rubber bands
- ❑ Pencils
- ❑ Tape
- ❑ Paper clips
- ❑ String/yarn
- ❑ Binder clips
- ❑ Paper

- ❑ Index cards
- ❑ Glue
- ❑ Cardboard
- ❑ Cardboard rolls
- ❑ Water bottles
- ❑ Wooden craft sticks
- ❑ Ping-pong balls or other small, bouncy balls

### Group (Groups of 4)

- ❑ Poster paper
- ❑ Marking pens
- ❑ Sticky notes: green, yellow, and orange

### Individual

- ❑ Science notebook

### Teacher

- ❑ 3.5.R5: Playground Rubric
- ❑ TalkScience resource (http://stemteachingtools.org/assets/landscapes/TalkSciencePrintable.pdf)

## Advance Preparation

1. Gather materials.
2. Draw **3.5.R2: EiE Engineering Design Process** on chart paper.
3. Make a copy of **3.1.R1: Design a Playground** (from Lesson 1: Movement on the Playground), **3.5.R1: Map of New Playground**, and **3.5.R4: Criteria and Constraints** for use with the document camera.
4. Make a chart labeled Design Questions.
5. Review TalkScience resource (http://stemteachingtools.org/assets/landscapes/TalkSciencePrintable.pdf) to determine when best to use this resource in student-to-student discourse.

## Procedure

### Part I

Engage (60 minutes)

*Obtain information about the new playground design that will use force and motion and cause and effect.*

1. Ask students to reread **3.1.R1: Design a Playground** which they read in Lesson 1: Movement on the Playground. Ask the class, "What are the concepts we have learned in this unit?" Direct students to review their science notebook entries (from Lessons 1–4) on the cause and effect of force and motion on the playground. Based on your assessment from Lesson 4: Balanced and Unbalanced Forces, discuss some of the major things students now understand regarding forces that caused objects to move, changed the rate they moved, or the direction in which they moved. Emphasize areas that students were not clear on in the assessment. Chart these ideas. *ESRs: I learned that a force acts on an object that stays still or moves. I learned if forces are unbalanced then there will be a change in direction or speed. I learned that gravity is a force that pulls things down. I learned that identifying a pattern in motion can help predict future motion.*
2. Tell the class, "Your challenge is to use these science concepts about force and motion and the engineering process to design and build a model for a new playground structure or activity. You must also explain its function. To get started on thinking about our design, let's look at the district's architect's blueprint of the new playground area."
3. Show **3.5.R1: Map of New Playground** on the document camera, or draw it on chart paper. Point out where the new basketball court, soccer field, and tug-of-war areas will be. Remind the class that they worked on prototypes for designs for these areas earlier in the lessons.
4. Point out the area on **3.5.R1: Map of New Playground** where the new playground space is located. Explain that this is the area where they will be creating activities or structures to be built. This area can be used for one large activity/structure or multiple activities/structures.
5. Take students out to the playground and re-define the challenge. Have them envision what the design of the new structure or activity might be and how it will be located in the playground space. Ask them to write any questions they have about the challenge in their science notebook. Encourage them to write questions that will help them with their design.

   *Possible student-driven questions:*

   - *What can we design it to do?*
   - *Does it have to have _____? _____?*
   - *Should/Can there be moving parts in the structure?*
   - *Should/Can there be more than _____ sections (or parts) in the structural design?*
   - *Should/Will the different parts of the structure work together?*
   - *Is there a purpose in the design that supports physical education or science goals?*
   - *How will what I have learned about force and motion influence my design?*

6. On another page in their science notebook, have students make a quick diagram of their ideas for the new playground structures or activities.
7. Return to the classroom and have students share their questions as you write them on a chart. Then, give them time to explain some of their design ideas.

**TEACHER NOTE**

Explain to students that the questions about size, materials, and time will be answered during your explanation of the engineering design process. Also explain that they will work to figure out the answers to many of their other questions during this lesson.

8. Introduce the **3.5.R2: EiE Engineering Design Process**. In the goal area ask students to write the challenge: Design a new playground structure or activity that includes force and motion.

**TEACHER NOTE**

**3.5.R2: EiE Engineering Design Process** is an example of the engineering design process by Engineering is Elementary (EiE) a division of the Museum of Science, Boston (https://www.eie.org/). **3.5.R3: NGSS Engineering Design Process** is another example of the engineering design process taken from the NGSS Science Frameworks (Appendix I).

Note: The design process is called out in ETS1.A [Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. (3-5-ETS1-1)]

9. Begin with the **ASK** circle. Guide students with the process of asking questions and defining problems, such as: “What do you know? What do you need to do? What questions do you have about the activity they will complete?” (Refer to the chart made earlier, and if necessary, add more questions.)
10. Explain that the school administration has decided on criteria which the playground design needs to meet. All criteria must be met or the design will not be accepted. Display the top of **3.5.R4: Criteria and Constraints** on the document camera and conduct a discussion for each of the criteria for the project.

    The design and explanation must include:

    a. At least two different places where forces will be used to produce movement. The explanation must describe those forces as balanced and/or unbalanced.
        - Ask students for an example. *ESRs: movement with an unbalanced force of a push or a pull (e.g., dragging an object; hitting/kicking, bouncing an object)*

b. The strength and direction of the forces on the object.
   - Ask students for examples. *ESRs: a hand throwing a basketball straight at a basketball hoop, a strong kick of a soccer ball that travels a big distance*

c. A change in either direction of motion or distance.
   - Ask students for examples. *ESRs: one person kicks a soccer ball a distance toward another player who kicks the ball farther down the soccer field; a basketball thrown upward toward the hoop hits the backstop before falling into the hoop and toward the ground.*

d. The pattern of motion that would be observed.
   - Ask students for examples. *ESRs: a merry-go-round moves as a result of a force, and the pattern of the speed depends on the strength of the force; every time a soccer ball is kicked very weakly, it doesn't go very far.*

e. Motivate students to want to use the playground structure or activity.
   - Ask students for examples. *ESRs: a climbing wall that looks like a real mountainside, a tall merry-go-round that has swings underneath it, etc.*

11. Explain that in addition to criteria, engineers must contend with a variety of limitations or constraints. These constraints describe the conditions under which the design must be done. Constraints are things like time to complete the project, size, weight, use of materials, and budgets.
12. Display the bottom of **3.5.R4: Criteria and Constraints** on the document camera and review the constraints for the project:

a. Materials are limited to what is available on the supply table.
   - Show students the materials on the supply table.

b. The prototype of the playground structure or activity size must be limited to the size of your desktop.
   - Show students the area of the desktop.

c. The prototype of the playground structure or activity must be designed in a specified numbers of class periods.
   - Tell students how many class periods they will have to design their prototypes.

# Part II

## Explore 1 (60 minutes)

*Communicate ideas about the new playground design using force and motion and cause and effect.*

13. Point to the **IMAGINE** circle on **3.5.R2: EiE Engineering Design Process**. Explain that this is the time when engineers use their imaginations to help them brainstorm as many possible design solutions as they can.

14. Give time for students to individually brainstorm ideas that they would like to design, reminding them of the criteria. Have them record their ideas in their science notebook. Remind them that this is a “dream session” in which they can use force, motion, and direction symbols.
15. Divide the class into design teams. One way to do this is to have students share the type of design they thought about (e.g., design an activity; design a structure for students to climb or slide; design obstacle course for climbing, jumping, rolling) and then see if there are others who have a similar idea. Group those students together. Another idea is to just number students off into groups of 4 and let them share their ideas.
16. Point to the **PLAN** circle on **3.5.R2: EiE Engineering Design Process**. Ask group members to share their ideas with each other. It is okay to continue to brainstorm or build on each other’s ideas. However, their goal is to come to agreement on one possible design idea.
17. Once the team has decided on one possible design idea, remind teams of the criteria. Encourage students to include what they know about force and motion to explain their design. (See Teacher Note below.)
18. Have the teams review the constraints to see if they need to adjust any of their thinking.
19. Finally ask teams to review the materials that are available for building and determine if they need to make any changes. Then ask teams to agree on what materials to use.
20. Distribute poster paper to each group and ask them to create a team design diagram.
21. Have groups share their plan and materials list with you for approval and gather their supplies.

**TEACHER NOTE**

▶ When students share their plan, one thing to have them explain is what type of force will be used (balanced, unbalanced); how the forces lead to motion (cause and effect); as well as making sure they are showing the predicted direction and strength of the forces with arrows. This is an important part of their design, as it makes them reflect on what they’ve learned about forces and motion. This can be used as a point of formative assessment.

**TEACHER NOTE**

This activity allows for integrating mathematics, and you can choose to put a “price” on the materials, and give groups a limit of how much they can “spend.” It would tie in to 3.NBT.A.2: Use place value understanding and properties of operations to perform multi-digit arithmetic.

## Part III

### Explore 2 (60–120 minutes)

*Build a physical model that is the prototype design showing the cause and effect of how force and motion are used in the new activity/structure.*

> **TEACHER NOTE**
>
> For the purposes of this lesson, a physical model can be either building a model with real stuff or making a detailed diagram.

22. Point to the **CREATE** circle on the chart of **3.5.R2: EiE Engineering Design Process**. Ask teams to build a model of their playground structure or activity based on their design plan.
23. Ask teams to test the model, doing several trials and recording their observations and data in their science notebook.
24. Ask teams to write their explanation of how their design met all the criteria.

## Part IV

### Explain (60 minutes)

*Compare multiple solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem.*

25. Have teams share results and explain their design: “What were they trying to do? What results did they get? Did the design stay within the constraints? Did it meet the criteria? Does it have an explanation based on the science concepts of force and motion?”

> **TEACHER NOTE**
>
> The goal is for the teams to present their design and its effectiveness for solving the problem. It would be best if all groups could hear from each other, but this is time consuming. One option is to partner groups, or put them in trios so that they hear at least 1 or 2 other groups reporting. Another way is to do a gallery walk where students visit different teams. One member of each team remains with the design to share results; the rest of the team travels and then returns and shares what they learned.
>
> It is a good idea to take pictures of the students’ prototypes at this point. When students do revisions to their models, it is helpful for the students to have documentation of their initial model for reflection.

Students may need scaffolding to stay on topic and to generate questions of each other that are helpful. You can choose to offer some sentence frames that show how engineers talk to one another about designs:

For sharing ideas:

We observed _____.

Our data shows _____.

We think _____ because _____.

We are wondering about _____.

For responding to others' ideas:

Can you explain _____ to me?

Why do you think _____?

What evidence do you have….?

I agree with _____ because _____.

I respectfully disagree with _____ because _____.

26. Bring the class together for a final discussion of what they found out about each other's designs.

**TEACHER NOTE**

Explain that this engineering design process is a simplified version built on specific components within a more complex design process. This is called out in the standard ETS1.B: At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs.

## Part V

### Elaborate (60 minutes)

*Communicate with peers about proposed solutions and possible revisions and redesigns of their model to better meet the criteria and constraints of their design.*

27. Point to the **Improve** circle on the chart of **3.5.R2: EiE Engineering Design Process**. Explain that engineers often try to improve on a design. Ask students to think of things (or technologies) that have been improved in their lives. *ESRs: many versions of video game boxes; improved cell phones; bigger, thinner TVs.*

**TEACHER NOTE**

Point out to students that engineers strive to improve existing technologies or develop new ones to increase their benefits (to man, living creatures, or the environment), decrease known risks, and to meet societal demands. If you are able to show an example of an old, big cell phone (or a flip phone) and a newer version, this real object can help students connect with this concept.

28. Request teams to think of and discuss what they learned from the other teams' designs. Say, "Can you use any ideas from other projects to make your model work better?" Have the teams brainstorm new ideas to improve their design and support their brainstorming with reasoning.
29. Distribute chart paper (or have students return to their original design) for students to refine or modify their design plan. Have students add an explanation of the changes they decided to make in their design and from where or whom they got the idea.

    Provide sentence frames if necessary:

    After discussing and sharing ideas with _____, we decided to improve our design by _____.

    After observing other teams' proposed solutions, we decided to improve our design by _____.
30. Then, have students post their modified/revised designs, and have the groups do a gallery walk. During the gallery walk, students walk around the room evaluating their peers' designs and use the sticky notes to leave comments about the design.
    a. They may ask a question or request clarification on yellow sticky notes.
    b. They may write an observation on green sticky notes.
    c. They may make a suggestion for improvement on orange sticky notes.

**TEACHER NOTE**

Remind students to use the sentence frames that show how engineers talk (from Step 25).

31. Once all teams have had a chance to leave their critiques, give teams time to discuss the feedback they received, and then rebuild or modify their model. Allow time for students to test it again, if they wish.
32. Ask teams to write an evaluation of their new design in their science notebook. "Did it work better? What is the evidence?"

## Part VI

### Evaluate (45–60 minutes)

*Construct an argument that explains how motion on the playground is the result of unbalanced forces and can be supported by specific designs.*

33. Ask each student to review his or her final design and evaluate if it:
    a. meets the design specifications of the original plan AND
    b. was tested and worked.

34. ▶ Direct students to write a letter to the school board that includes the diagram of their finalized piece of playground structure or activity. The letter must explain:
    - how it works and how students would use it.
    - why their design should be chosen for a new playground structure or activity based on evidence that it uses force and motion.
    - how the causal relationship between the direction and strength of forces are used in their playground structure or activity by creating a change in motion.
    - how this created balanced or unbalanced forces and what patterns of motion were observed.
    - how they used the engineering design process to create, test, and revise their solution.
    - what they learned along the way.

**TEACHER NOTE**

Writing a letter gives students an opportunity to communicate scientific information in a written format, including various forms of media as well as tables, diagrams, and charts which is a grade-level element of the SEP "Obtaining, Evaluating, and Communicating Information." You could add an oral presentation to this assignment as well. Writing a letter of this type also supports the SEP of Constructing Explanations.

▶ You can use the letter to assess students' knowledge of the three dimensions they used to solve the problem and their use of the engineering design process to explain change through the relationships (cause and effect) between forces and motion. Use **3.5.R5: Playground Rubric** for this assessment.

## References

2016 Science Framework. (n.d.). Retrieved August 04, 2020, from (https://www.cde.ca.gov/ci/sc/cf/cascienceframework2016.asp.)

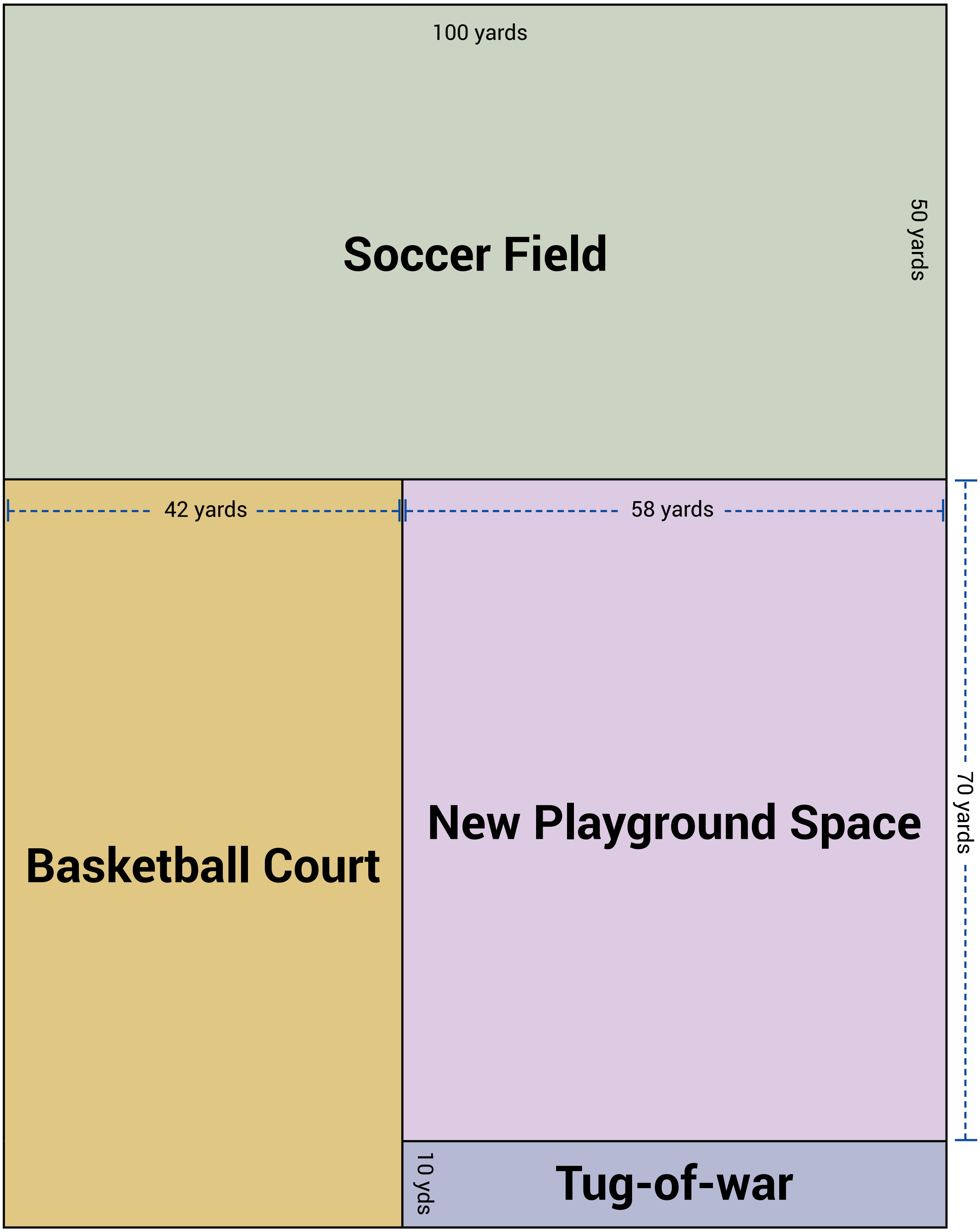
NGSS Lead States. 2013. Next Generation Science Standards: For States, By States. Appendix I: Engineering Design in the Next Generation Science Standards. Washington, DC: The National Academies Press.

Museum of Science: Boston. (2020). *The Engineering Design Process*. EiE.org. (https://www.eie.org/overview/engineering-design-process.)

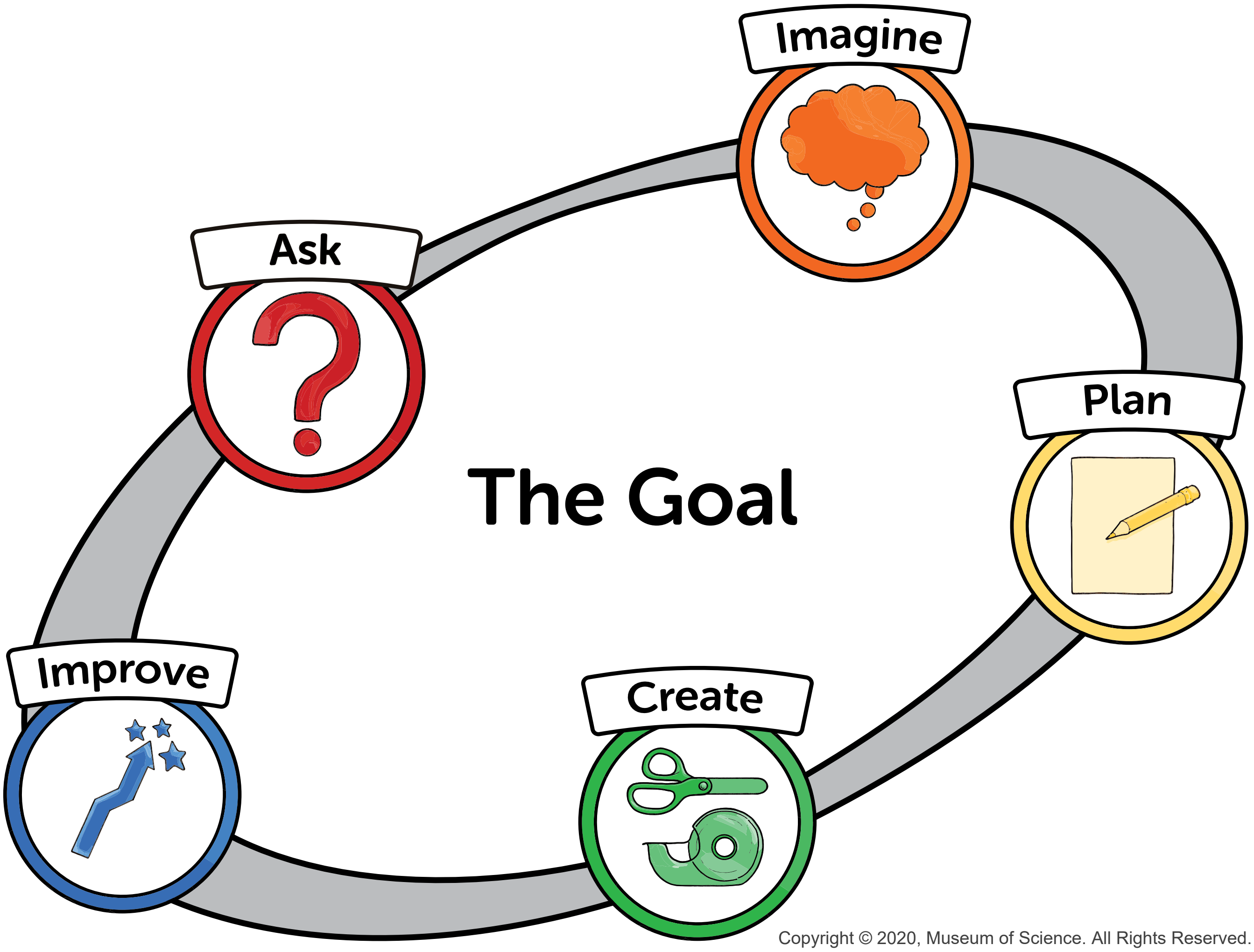
Stem Teaching Tools. (n.d.). Talk Science Printable. Retrieved from (http://stemteachingtools.org/assets/landscapes/TalkSciencePrintable.pdf)

## Toolbox Table of Contents

## Map of New Playground

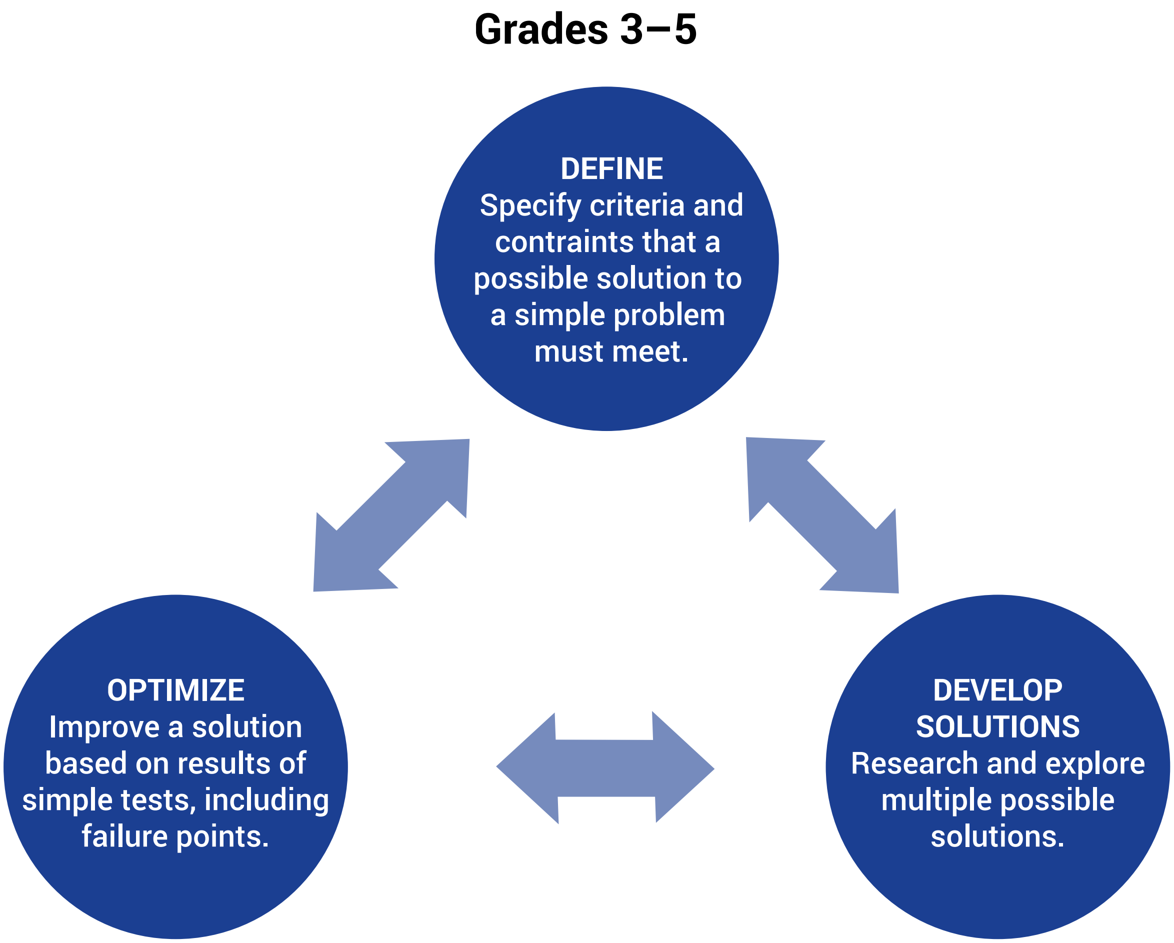


# EiE Engineering Design Process




The Engineering Design Process created by EIE.org.
https://www.eie.org/overview/engineering-design-process. Used with Permission.

# NGSS Engineering Design Process




NGSS Lead States. 2013. Next Generation Science Standards: For States, By States. Appendix I: Engineering Design in the Next Generation Science Standards, page 439. Washington, DC: The National Academies Press.

# Criteria and Constraints

## Criteria

The design and explanation must:

1. show at least 2 different places where forces will be used to produce movement, and the explanation must describe those forces as balanced and/or unbalanced;
2. include the strength and direction of the forces on the object;
3. include a change in either direction of motion or distance;
4. describe the pattern of motion that would be observed; and,
5. motivate students to want to use the playground structure or activity.

## Constraints

The constraints include:

1. materials for prototype are limited to what is available on the supply table like the list above
2. prototype of the playground structure or activity must be limited to the size of your desktop; and
3. prototype of the playground structure or activity must be designed in “x” class periods.

# Playground Rubric

| Component | 4 | 3 | 2 | 1 |
|---|---|---|---|---|
| Overall Design is Based on Sound Scientific Concepts (DCI) | Uses at least two forces, either balanced and unbalanced, or two unbalanced forces<br>**AND**<br>includes forces that act on the object with either strength or direction<br>**AND**<br>includes a change in either direction of motion or distance. | Uses at least two forces, either balanced and unbalanced, or two unbalanced forces<br>**AND**<br>includes forces that act on the object with either strength or direction<br>**AND**<br>includes a change in either direction of motion or distance. | Uses at least two forces, either balanced and unbalanced, or two unbalanced forces<br>**AND**<br>includes forces that act on the object with either strength or direction<br>**OR**<br>includes a change in either direction of motion or distance. | Uses at least two forces, either balanced and unbalanced, or two unbalanced forces<br>**OR**<br>includes forces that act on the object with either strength or direction<br>**OR**<br>includes a change in either direction of motion or distance. |
| Explanation of the causal relationship of change (CCC) | Shows comprehension of the fact that a force that is unbalanced causes a change in direction and distance<br>**AND**<br>a force that is balanced has no change in motion<br>(a balanced force on an object means it is not moving). | Shows comprehension of the fact that a force that is unbalanced causes change in direction and distance<br>**OR**<br>a force that is balanced has no change in motion<br>(a balanced force on an object means it is not moving). | Shows comprehension of the fact that a force causes motion. | Shows comprehension of the fact that a push or pull causes the motion. |
| Communication of scientific information (SEP) | Communicates information orally<br>**AND**<br>in written form using tables, diagrams, and charts. | Communicates information orally<br>**OR**<br>in written form using tables, diagrams, and charts. | Communicates information in written form using tables, diagrams, or charts. | Communicates information only in written form. |

## Next Generation Science Standards (NGSS)

This lesson is building toward:

| PERFORMANCE EXPECTATIONS (PE) | |
|---|---|
| **3-PS2-1** | Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object. [Clarification Statement: Examples could include an unbalanced force on one side of a ball can make it start moving; and, balanced forces pushing on a box from both sides will not produce any motion at all.] [*Assessment Boundary: Assessment is limited to one variable at a time: number, size, or direction of forces. Assessment does not include quantitative force size, only qualitative and relative. Assessment is limited to gravity being addressed as a force that pulls objects down.*] |
| **3-5-ETS1-1** | Define a simple design problem reflecting a need or want that includes specified criteria for success and constraints on materials, time, or cost. [*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.*] |
| **3-5-ETS1-2** | Generate and compare multiple possible solutions to a problem based on how well each is likely to meet the criteria and constraints of the problem. [*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.*] |

NGSS Lead States. 2013. Next Generation Science Standards: For States, By States. Washington, DC: The National Academies Press.

| SCIENCE AND ENGINEERING PRACTICES (SEP) |
|---|
| **Asking Questions and Defining Problems** |
| • Define a simple design problem that can be solved through the development of an object, tool, process, or system and includes several criteria for success and constraints on materials, time, or cost. |
| **Constructing Explanations and Designing Solutions** |
| • Apply scientific ideas to solve design problems.<br>• Generate and compare multiple solutions to a problem based on how well they meet the criteria and constraints of the design solution. |
| **Developing and Using Models** |
| • Develop and/or use models to describe and/or predict phenomena.<br>• Develop a diagram or simple physical prototype to convey a proposed object, tool, or process.<br>• Use a model to test cause and effect relationships or interactions concerning the functioning of a natural or designed system. |
| **Obtaining, Evaluating, and Communicating Information** |
| • Communicate scientific and/or technical information orally and/or in written formats, including various forms of media as well as tables, diagrams, and charts. |

# Appendix 3.5

## Next Generation Science Standards (NGSS) (continued)

| SCIENCE AND ENGINEERING PRACTICES (SEP) (continued) |
|---|
| **Engaging in Arguments from Evidence** |
| • Construct an argument with evidence, data, and/or a model. |

| DISCIPLINARY CORE IDEAS (DCI) |
|---|
| **ETS1.A: Defining and Delimiting Engineering Problems** |
| • Possible solutions to a problem are limited by available materials and resources (constraints). The success of a designed solution is determined by considering the desired features of a solution (criteria). Different proposals can be compared on the basis of how well each one meets the specified criteria for success or how well each takes the constraints into account. |
| **ETS1.B: Developing Possible Solutions** |
| • At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. |
| **PS2.A: Forces and Motion** |
| • The patterns of an object's motion in various situations can be observed and measured; when that past motion exhibits a regular pattern, future motion can be predicted from it.<br>• Each force acts on one particular object and has both strength and a direction. An object as rest typically has multiple forces acting on it, but they add to give zero net force on the object. Forces that do not sum to zero can cause changes in the object's speed or direction of motion. |
| **PS2.B: Types of Interaction** |
| • Objects in contact exert forces on each other. |

| CROSSCUTTING CONCEPTS (CCC) |
|---|
| **Cause and Effect** |
| • Students identify and test causal relationships and use these relationships to explain change. They understand events that occur together with regularity might or might not signify a cause and effect relationship. |
| **Influence of Engineering, Technology, and Science on Society in the Natural World** |
| • Engineers improve existing technologies or develop new ones to increase their benefits, decrease known risks, and meet societal demands. |

# Appendix 3.5

## Common Core State Standards (CCSS)

| CCSS ELA WRITING |
|---|
| **CCSS.ELA-LITERACY.W.3.8**<br>Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. |
| **CCSS ELA SPEAKING AND LISTENING** |
| **CCSS.ELA-LITERACY.SL.3.1**<br>Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grade 3 topics and texts, building on others' ideas and expressing their own clearly. |
| **CCSS.ELA-LITERACY.SL.3.3**<br>Ask and answer questions about information from a speaker, offering appropriate elaboration and detail. |
| **CCSS.ELA-LITERACY.SL.3.4**<br>Report on a topic or text, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable level. |



## California English Language Development (ELD) Standards

| CA ELD | | |
|---|---|---|
| **P1.3.3** Offering Opinions | | |
| **EMERGING** | **EXPANDING** | **BRIDGING** |
| Offer opinions and negotiate with others in conversations using basic learned phrases (e.g., *I think . . .*), as well as open responses in order to gain and/or hold the floor. | Offer opinions and negotiate with others in conversations using an expanded set of learned phrases (e.g., *I agree with X, and . . .*), as well as open responses in order to gain and/or hold the floor, provide counter-arguments, etc. | Offer opinions and negotiate with others in conversations using a variety of learned phrases (e.g., *That's a good idea, but X*), as well as open responses in order to gain and/or hold the floor, provide counter-arguments, elaborate on an idea, etc. |
| In addition to the standard above, you may find that you also touch on the following standard in this lesson as well:<br>**P1.3.1** Contribute to class, group, and partner discussions, including sustained dialogue, by following turn-taking rules, asking relevant questions, affirming others, and adding relevant information.<br>**P1.3.5** Demonstrate active listening to oral presentations by asking and answering questions, with occasional prompting and moderate support.<br>**P1.3.9** Plan and deliver brief oral presentations on a variety of topics and content areas. | | |