

# What is Technology? Guess the Technology



**Overview:** Kids will explore a technology, consider its properties, and create clues to help others to guess what each technology is.

**Note to Educator:** This activity assumes that kids know the definition of technology and are ready to think more deeply about technology.

Many people only think of technologies as things that are electronic or “hi-tech.” Technology is really anything designed by people to help solve a problem.

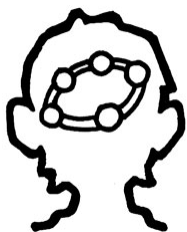
Set the Stage (5 min)



Activity (30 min)



Reflect (10 min)



## Materials

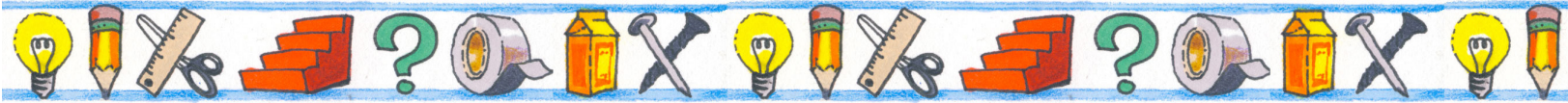
**For each group of 3-5 kids:**

- Technology Clues*, p. 5
- 1 paper bag
- 1 technology (choose from the list below):
- electronic device,     stuffed animal     hair clip
- like a cell phone or     hat     button
- calculator     scissors     spoon
- water bottle     sweater     key
- roll of tape     dice     book
- ruler     juice box     stapler
- construction paper     bag     glue stick

## Preparation

*Time Required: 10 minutes*

1. Place each technology in a paper bag.
2. Copy *Technology Clues* for each group.
3. Copy the *Technology Checklist* chart so that everyone can see it.

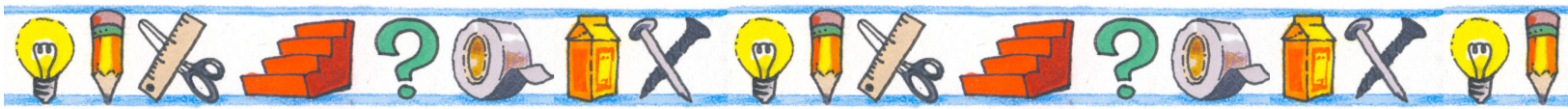


## Chart for Prep Adventure

### Technology Checklist

1. What is your technology?
2. What does your technology do? What problem does it solve?
3. Could you use it in another way?
4. What materials is it made from?
5. What else could you make it from?

# What is Technology? Guess the Technology



## Kids will learn:

- technology is anything designed by people to help solve a problem or meet a need.
- engineers design and improve technologies.



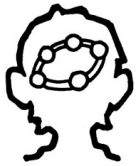
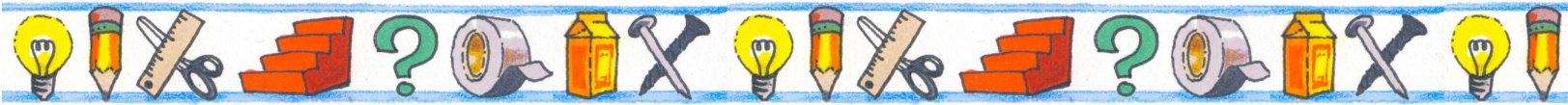
## Set the Stage: What is Technology? (5 min)

1. Tell kids that today they're going to play a game about technology, and they will start by doing a quick survey.
2. Have everyone sit in a circle. Have kids hold up their hand if they think that a cell phone is technology. What about dog food? What about a rock? What about a piece of paper?
3. To help kids remember what a technology is, ask:
  - **How do you think you can tell if something is a technology? A technology is human made and helps you solve a problem.**
4. If you need to, revisit the technologies above to make sure kids understand why they are all technologies, except for the rock.



## Guess the Technology (30 min)

1. Tell kids that they will get a mystery technology. They will work in groups to come up with clues to help others guess what the technology is.
2. As an example, give kids the following clues one at a time to see if they can figure out that the technology is a spoon:
  - **It can be made of plastic, metal, or wood.**
  - **I can stick it on my nose.**
  - **I can also use it to dig a hole.**
  - **It helps me pick up liquid or solid food.**
3. Split the kids into groups of 3-5 and give each group a bag with a technology inside.
4. Each group should investigate their technology and think about the questions on the *Technology Checklist* chart to help them create clues.
5. Each group will write 4-8 clues about their technology. These clues will be read one at a time to see how many clues it takes for the entire group to guess what the technology is.
6. Give kids 10-15 minutes to write their clues. Encourage kids to make it a challenge by starting with more difficult clues, and making them easier as they get to clue 4 or 5.
7. While groups are working, walk around to check in and make sure they are not struggling.
8. Once groups have finished, have each group share out their clues. When someone correctly guesses the technology, move on to the next group.



## Reflect (10 min)

1. To reflect, ask each group:
  - **What was your technology?**
  - **How did you know it is a technology?** *It is made by humans and it solves a problem.*
  - **Were all of the objects you saw technologies? Why or why not?** *Yes, because people engineered them, and they help solve problems.*
2. Tell kids you have one more object for them to think about. Ask:
  - **Do you think a leaf is a technology? Why or why not?** *No, because a person did not engineer it.*

**Tip:** A rock, leaf, or any other natural object on their own are not technologies. If people turn those objects into tools, however, they could become technologies! For example, using a rock to grind corn or making it into an arrow head makes the rock a technology.

# What is Technology? Guess the Technology



## Write your Clues

*Write 4-8 clues for your technology. Try to start with more difficult clues, then make them easier when you get to clue 4.*

1. \_\_\_\_\_  
\_\_\_\_\_.
2. \_\_\_\_\_  
\_\_\_\_\_.
3. \_\_\_\_\_  
\_\_\_\_\_.
4. \_\_\_\_\_  
\_\_\_\_\_.
5. \_\_\_\_\_  
\_\_\_\_\_.
6. \_\_\_\_\_  
\_\_\_\_\_.
7. \_\_\_\_\_  
\_\_\_\_\_.
8. \_\_\_\_\_  
\_\_\_\_\_.

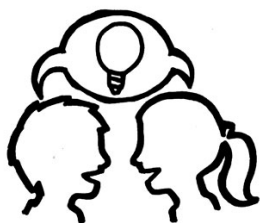
# What is Technology? Technology Ice Breaker



**Overview:** Kids will practice identifying objects as technologies or non-technologies while getting to know each other for the first time.

**Note to Educator:** Many people only think of technologies as things that are electronic or “hi-tech.” Technology is really anything designed by people to help solve a problem.

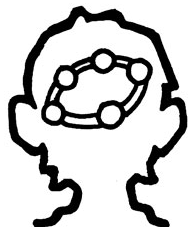
Set the Stage (10 min)



Activity (20 min)



Reflect (15 min)



## Materials

**For the entire group:**

- 5-10 human-made objects that use batteries or electricity (e.g., flashlight, cell phone, calculator)
- 5-10 human-made objects (e.g., pencil, book, shoe)
- 5-10 natural objects (e.g., leaf, rock, fruit, vegetable)
- box or bag
- marker
- Technology/Not a Technology List, p. 5
- 1 large piece of paper

## Preparation

*Time Required: 10 minutes*

1. Gather several human-made objects, some of which use batteries or electricity, and several natural objects. There should be at least one object for each kid and any educators who will be participating.
2. Place these objects in a box or bag.
3. Copy the *What's What?* chart onto a large sheet of paper.



## Chart for Prep Adventure

What's What?	
Technology	Not A Technology

# What is Technology? Technology Ice Breaker



## Kids will learn:

- A technology is anything designed by people to help solve a problem.
- Engineers design technologies.



### Set the Stage (10 min)

1. Have everyone sit in a circle and place the bag or box of objects in the center.
2. Allow everyone to choose one object from the bag/box.
3. Go around the circle and have kids introduce themselves and guess whether their object is a technology, and why they think so. It is okay if kids guess incorrectly at this point.
4. Leave the objects where they are to play the next game, and tell kids that they will come back to these objects later.



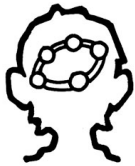
### What's What? (20 min)

1. Split the kids into two groups. Have each group choose a spokesperson and a group name. Write the two group names on the board.
2. Hang the *What's What?* chart somewhere visible.
3. Read an item from the Technology/ Not a Technology List. Give groups 15 seconds to decide whether the item is a technology. The spokesperson from each group will give the group's answer.
4. Write the item in the correct column on the *What's What?* chart.
5. Keep track of the correct answers given by each group by marking a tally mark next to their group name. The goal of the game is to be the first group to get 10 tally marks.
6. After a group has guessed 10 correctly, gather kids around the *What's What?* chart. Ask:
  - **What do you think the technologies have in common?** *People designed them.*
  - **What do you think the items that are NOT technologies have in common?** *They are natural. People did not design them.*
  - **If you were writing a dictionary, how would you define technology?** *A technology is anything designed by people to help solve a problem.*

What's What?	
Technology	Not A Technology
<i>computer</i>	<i>a dog's paw</i>
<i>cup</i>	<i>fur</i>

**Tip:** Kids will have the chance to discuss the chart later, so it is okay if they do not understand exactly why an item is a technology or not as you are playing the game.

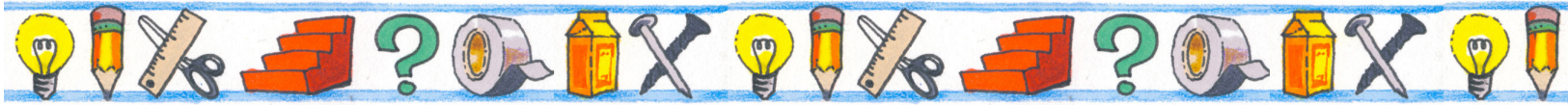




### Reflect (15 min)

1. Have kids sit down in a circle next to the objects they chose from the beginning.
2. Go around the circle and ask kids to explain whether they have changed their minds about whether their objects are technologies, and why.
3. Ask the group:
  - **What technologies do you see in this room?** *Examples include the wall, the floor, chairs, clothing, etc.*
  - **Do you see anything in this room that is not a technology?** *Examples include plants, dirt, sunlight, air, etc.*
  - **Who do you think designs these technologies?** *Engineers design technologies. There are many different types of engineering because there are many different types of technologies.*
  - **Would you like to experience being an engineer?**

## What is Technology? Technology Ice Breaker



Choose items from these two lists while playing *What's What?*

## Technology

computer  
 television  
 laser pointer  
 camera  
 paintbrush  
 cup  
 shoes  
 radio  
 hat  
 soap  
 digital clock  
 plastic  
 light bulb  
 paper  
 glasses  
 cardboard box  
 backpack  
 cell phone  
 dog food  
 music  
 airplane  
 sponge  
 crayon  
 wheel  
 marble (toy)  
 hole punch  
 kite string  
 pancake  
 sweater

## NOT a Technology

a dog's paw  
 fur  
 mud  
 egg shell  
 mountain  
 waterfall  
 cave  
 cocoon  
 toenail  
 dirt  
 pinecone  
 tree  
 wood  
 ocean  
 bird beak  
 eyeball  
 wind  
 ant  
 river  
 volcano  
 thunder  
 tomato  
 wild flower  
 spider web  
 hiccup  
 fossil  
 footprint  
 wolf  
 feather

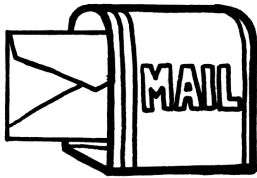
# What is Engineering? Tower Power Returns



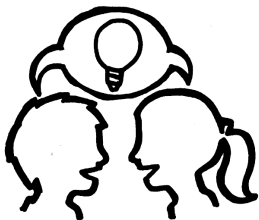
**Overview:** Kids will engineer and build a tower out of paper cups and construction paper that will support a stuffed animal.

**Note to Educator:** Who are engineers? Engineers are people who use science, math, and creativity to solve problems. Today kids will be engineers as they use the Engineering Design Process to design towers.

Duo Update (5 min)



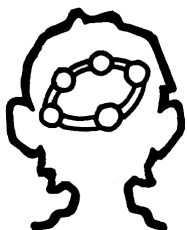
Set the Stage (5 min)



Activity (30 min)



Reflect (5 min)



## Materials

### For the entire group:

- Message from the Duo*, p. 5
- EDP Poster
- Building with Cups*, p. 7
- Building with Construction Paper*, p. 9
- timer or clock
- 1 small stuffed animal

### For each group of 3-5 kids:

- 20 small paper cups
- 2 sheets of construction paper
- At least 1 foot of masking tape
- 1 ruler
- 1 pair of scissors

### For each kid:

- Reflect Page*, p. 11

## Preparation

*Time Required: 10 minutes*

1. Have the *Message from the Duo* ready to share.
2. Make samples of the items found on *Building with Cups* and *Building with Construction Paper*.
3. Copy one *Reflect Page* for each kid.

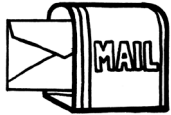


# What is Engineering? Tower Power Returns



## Kids will learn:

- the Engineering Design Process is a tool they can use to help solve problems.



## Present the Message From the Duo (5 min)

- Tell kids that India and Jacob are a brother and sister who travel the world. They find problems and solve them using engineering.
- Today, India and Jacob sent us a message about a problem they'd like us to solve. Have kids read the *Message from the Duo* for more details.



## Set the Stage (5 min)

- Tell kids that today they are going to be engineers and use the Engineering Design Process to solve India and Jacob's problem. To check for understanding, ask:
  - What do India and Jacob need us to engineer? A tower to lift the animal up 10 inches so it doesn't get eaten by alligators.**
- Show groups the Engineering Design Process poster and tell them they are going to Ask questions about the problem, Imagine ways to solve it, Plan a design, Create and test it, and then think about ways to Improve it.



## Imagine (5 min)

- Tell kids it's time to look at the materials they can use and Imagine different ways to make them work.
- Split kids in groups of 3-5 and give each group 20 paper cups, 2 sheets of construction paper, scissors, and tape. Ask:
  - Can you Imagine any ways you could use these materials to engineer a tower?**
- If your kids want to see examples, show them the samples you prepared, or have them look at *Building with Cups* and *Building with Construction Paper*. Ask:
  - Do you think any of these ideas might work well? Why?**

## Plan and Create (at least 20 min)

- Tell kids it is time to plan and create their towers.
- Show the stuffed animal and explain that:
  - The challenge is to work in groups to engineer a tower that can hold the animal 10 inches in the air for at least 10 seconds.
  - Each group will have (at least) 20 minutes.
  - You can only use the cups, paper, and tape in the tower. The scissors are a tool only and

**Tip:** If you can, you may want to offer more time for this challenge.



cannot be used in the tower.

- You can hold the stuffed animal briefly, but you can't test it on your tower until the 20 minutes are up.
3. As groups work, circulate around the room. Ask questions like:
    - **Why do you think your design will work well?**
    - **Which step of the Engineering Design Process are you using right now? How do you know?**

**Tip:** You may choose to offer unlimited tape, or to challenge groups by limiting the tape to one or two feet.

### Tower Showcase (10 min)

1. Have each group present their tower. Ask each group questions like:
  - **Can you tell me about your design?**
  - **Which steps of the Engineering Design Process did your group use?**
2. Use a ruler to measure the tower. Give one kid the stuffed animal and have him or her place it on top of the tower. Count to 10 and observe what happens. Ask:
  - **What parts would you improve if you could design your tower again? Why?**



### Reflect (5 min)

1. Go through the Engineering Design Process poster with kids and have them talk about how they used each step to solve the problem. Ask questions like:
  - **How did you use this step of the Engineering Design Process to solve the problem?** *We Asked about the challenge; we Imagined ways to build with the materials; we Planned when we decided what design to use; we Created and Improved when we built and fixed the tower.*
  - **Why do you think it's important to use these steps?** *It helps us keep track of our ideas and make sure we're meeting our goal.*
  - **Do you think you are an engineer?**
2. Tell kids that they've just used the same steps that engineers use to solve problems. This means that they are engineers, too! Tell kids they will have the opportunity to engineer solutions to even bigger problems with India and Jacob later on.
3. Give kids time to record their thoughts on the *Reflect Page*.

# Prep Adventure What is Engineering? Tower Power Returns

Email



reply



forward



archive



delete

from

engineeringadventures@mos.org

subject

Engineering a Tower

to

You

10:36 AM

Hi everyone,

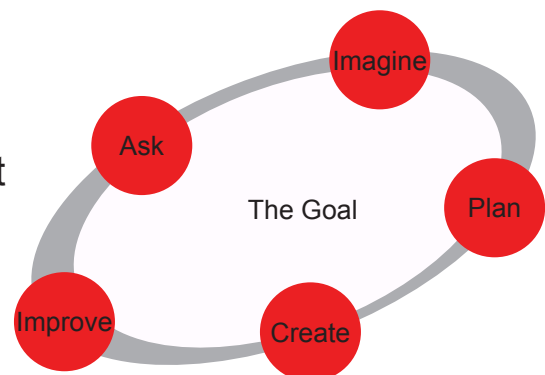
We're so excited to meet you! Our names are India and Jacob. We do a lot of traveling all over the world. We meet interesting people and see some amazing countries. Each place is unique, but we've found one thing in common. Everywhere we go in the world, we find problems that can be solved by engineers.

Engineers are problem solvers. They're people who design things that make our lives better, easier, and more fun! We heard you might be able to help us engineer solutions to some of the problems we find. That means you'll be engineers, too!

Today, we came across an engineering challenge we think you can help us solve. There are some animals living in a swamp along with lots of hungry alligators. The animals need to be at least 10 inches above the alligators to be out of their reach. India and I thought we could build a tall tower that the animals could stand on. Do you think you can engineer a tower for us?

We sent you one tool that we usually find really helpful when we're trying to engineer a solution to a problem. It's called the Engineering Design Process. Take a look at it and see if it can help you!

Good luck!  
India and Jacob

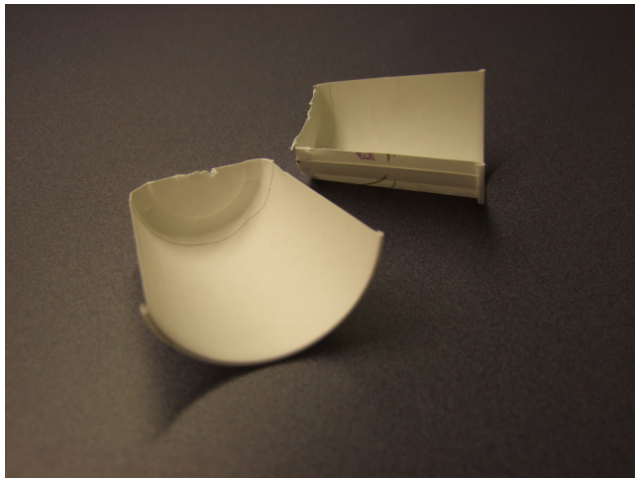
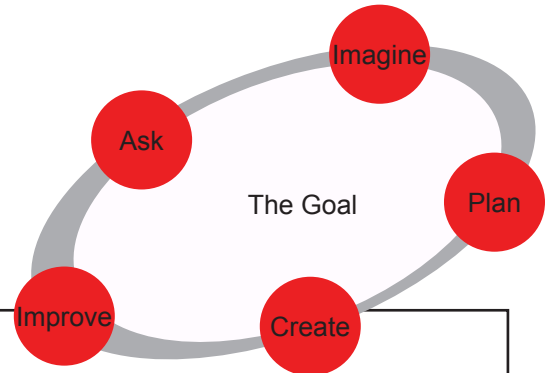








Here are three ways to build with cups.



Slice it!



Flatten it!



Octopus it!

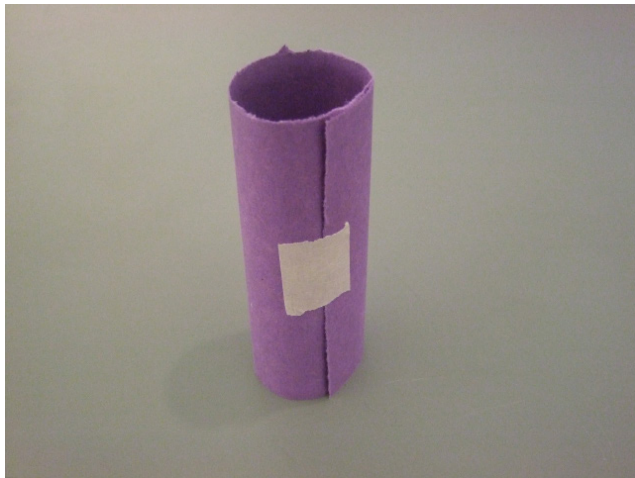
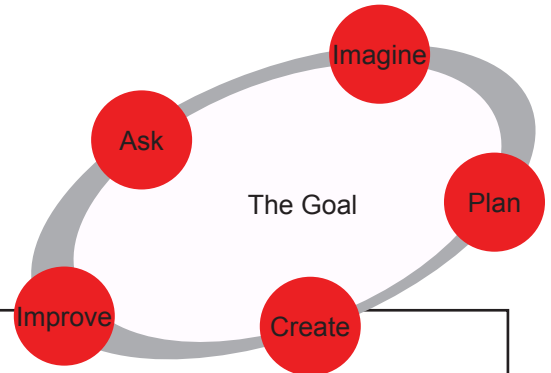
Will any of these ideas help your group build a tower? What other ideas do you have?

Talk with your group to figure it out!

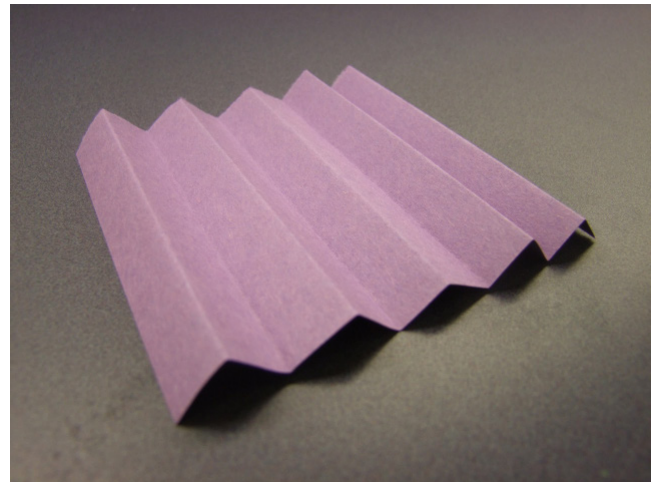




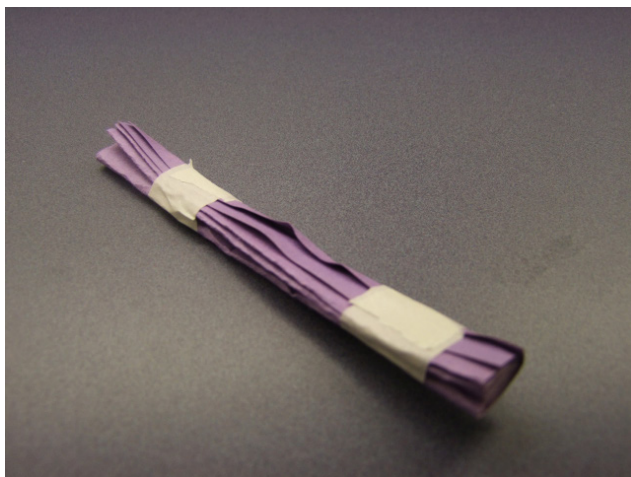
Here are three ways to build with construction paper.



Roll it!



Fan it!



Fold it!

Will any of these ideas help your group build a tower? What other ideas do you have?

Talk with your group to figure it out!

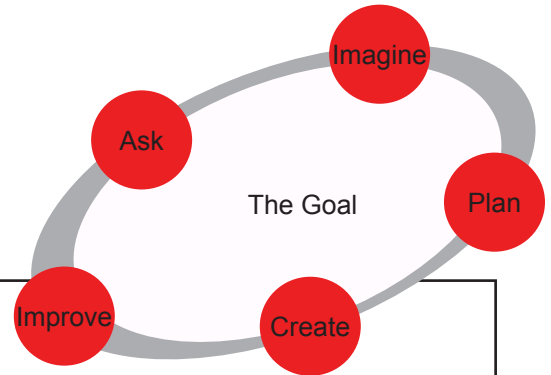


# What is Engineering? Tower Power Returns



## Draw Your Tower

Use the space below to draw a picture of your tower.



What parts of your tower design would you change if you could do it again?

## For the Record

I think engineering is:

- Fun
- Exciting
- Difficult
- \_\_\_\_\_



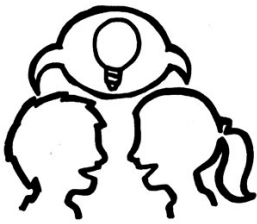
# What is Technology? Technology Tag



**Overview:** Kids will play technology tag and discover that a technology is anything designed by people to help solve a problem.

**Note to Educator:** Many people only think of technologies as things that are electronic or “hi-tech.” Technology is really anything designed by people to help solve a problem.

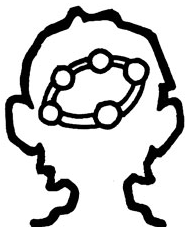
Set the Stage (15 min)



Activity (15 min)



Reflect (15 min)



## Materials

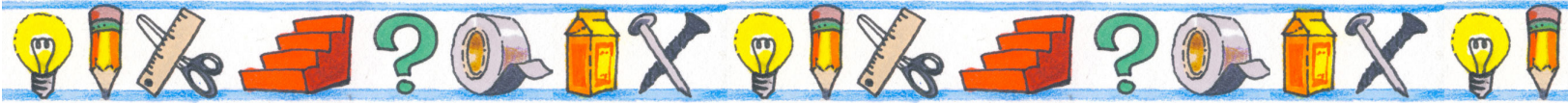
**For the entire group:**

- an open space with walls you can attach signs to (e.g., a classroom with the desks pushed aside, a gym)
- 3 sheets of chart paper
- marker
- Technology/Not a Technology List, p. 5

## Preparation

*Time Required: 10 minutes*

1. Create two large signs by labeling one sheet of chart paper “Technology” and the other “Not Technology.”
2. Copy the *What’s What?* chart onto a large sheet of paper.



## Chart for Prep Adventure

What's What?	
Technology	Not A Technology



# What is Technology? Technology Tag



## Kids will learn:

- A technology is anything designed by people to help solve a problem.
- Engineers design technologies.



## Set the Stage: Warm Up Game (15 min)

1. Get kids thinking about technology by asking them:
  - **Can you think of any examples of technologies?** *For now accept all answers.*
2. Tell kids that today they will play a game that has to do with technology. Split the kids into two groups. Have each group choose a spokesperson and a group name. Write the two group names on the board.
3. Hang the *What's What?* chart somewhere visible.
4. Read an item from the Technology/Not a Technology List. Give groups 15 seconds to decide whether the item is a technology. The spokesperson from each group will give the group's answer.
5. Write the item in the correct column on the *What's What?* chart.
6. Keep track of the correct answers given by each group by marking a tally mark next to their group name. The goal of the game is to be the first group to get 10 tally marks.
7. After a group has guessed 10 correctly, gather kids around the *What's What?* chart. Ask:
  - **What do you think the technologies have in common?** *People designed them.*
  - **What do you think the items that are NOT technologies have in common?** *They are natural. People did not design them.*
  - **If you were writing a dictionary, how would you define technology?** *A technology is anything designed by people to help solve a problem.*

What's What?	
Technology	Not A Technology
computer cup	a dog's paw fur

**Tip:** Kids will have the chance to discuss the chart later, so it is okay if they do not understand exactly why an item is a technology or not as you are playing the game.



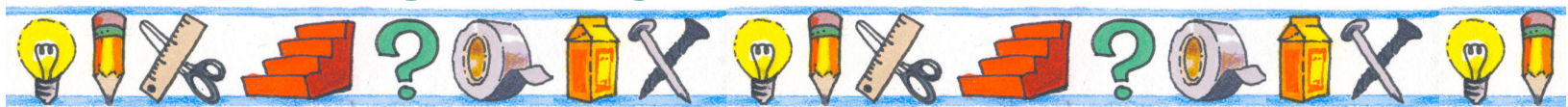
## Technology Tag (15 min)

1. You will need a large space to play this game. Place the "Technology" piece of chart paper on one wall, and the "Not Technology" sheet on the opposite wall.





# What is Engineering? Tools of the Trade



**Overview:** In this activity, kids will learn that engineers design and improve technologies for their jobs.

**Note to Educator:** Engineering can be a scary word for those who are not familiar with it. Engineers are really just people who use science, math, and creativity to solve problems. The main job of an engineer is to design and improve technologies, not to repair or build technologies.

Set the Stage (5 min)



Activity (30 min)



Reflect (10 min)



### Materials

**For the whole group:**

- Engineering Design Process poster
- Tools of the Trade*, printed on card stock, pp. 4–5
- Problems Page, p. 3
- large space to run in, outdoors or indoors
- tape or chalk for marking boundary lines

**For each kid:**

- Engineering Journal

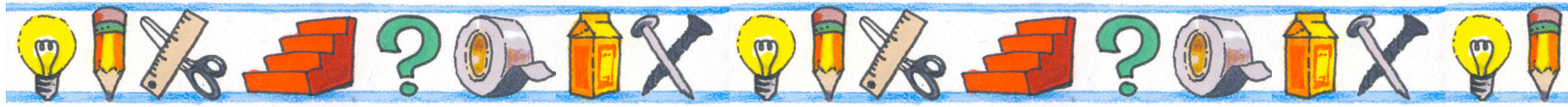
### Preparation

*Time Required: 5 minutes*

1. Copy *Tools of the Trade* onto card stock.
2. Use tape or chalk to create a large playing space that looks like this:

Team 1		Team 2
	Middle Line	

# What is Engineering? Tools of the Trade



Kids will learn:

- Engineers use the Engineering Design Process as a tool.
- Engineers help solve all kinds of problems.



## Set the Stage (5 min)

1. Review the concept of technology with kids. Ask:
  - **What is a technology?** *A technology is anything designed by people to help solve a problem.*
  - **Who designs technologies?** *Engineers.*
  - **How do you think engineers design technologies to solve problems?** *Engineers use a tool called the Engineering Design Process to help them solve problems.*
  - **What types of problems do you think engineers solve?** *Accept all responses. Tell kids that they will play a game that will help them answer this question.*



## Play Tools of the Trade (30 min)

1. Divide kids into two teams. Have each team number off. Place the *Tools of the Trade* images on the Middle Line. Have each team stand at opposite ends of the playing area.
2. Read a problem from the Problems page.
3. Give kids 5-10 seconds to decide, as a team, if an engineer would solve the problem.
4. Call off a number.
5. The two kids with that number will race each other to see who can grab the appropriate tool first. If kids think an engineer would solve the problem, they should grab the Engineering Design Process picture. If kids think someone else would solve the problem, they should grab the Tools picture.
6. After grabbing the picture, kids try to run to their team before being tagged!
7. Announce the correct answer. Points are awarded to the team that both chooses the correct picture and makes it back without getting tagged.

**Tip:** Have one or two kids keep track of the score and which problems are solved by engineers.

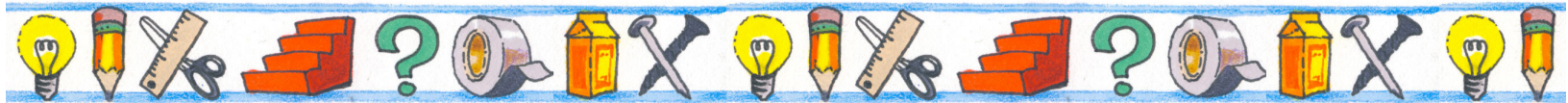


## Reflect (10 min)

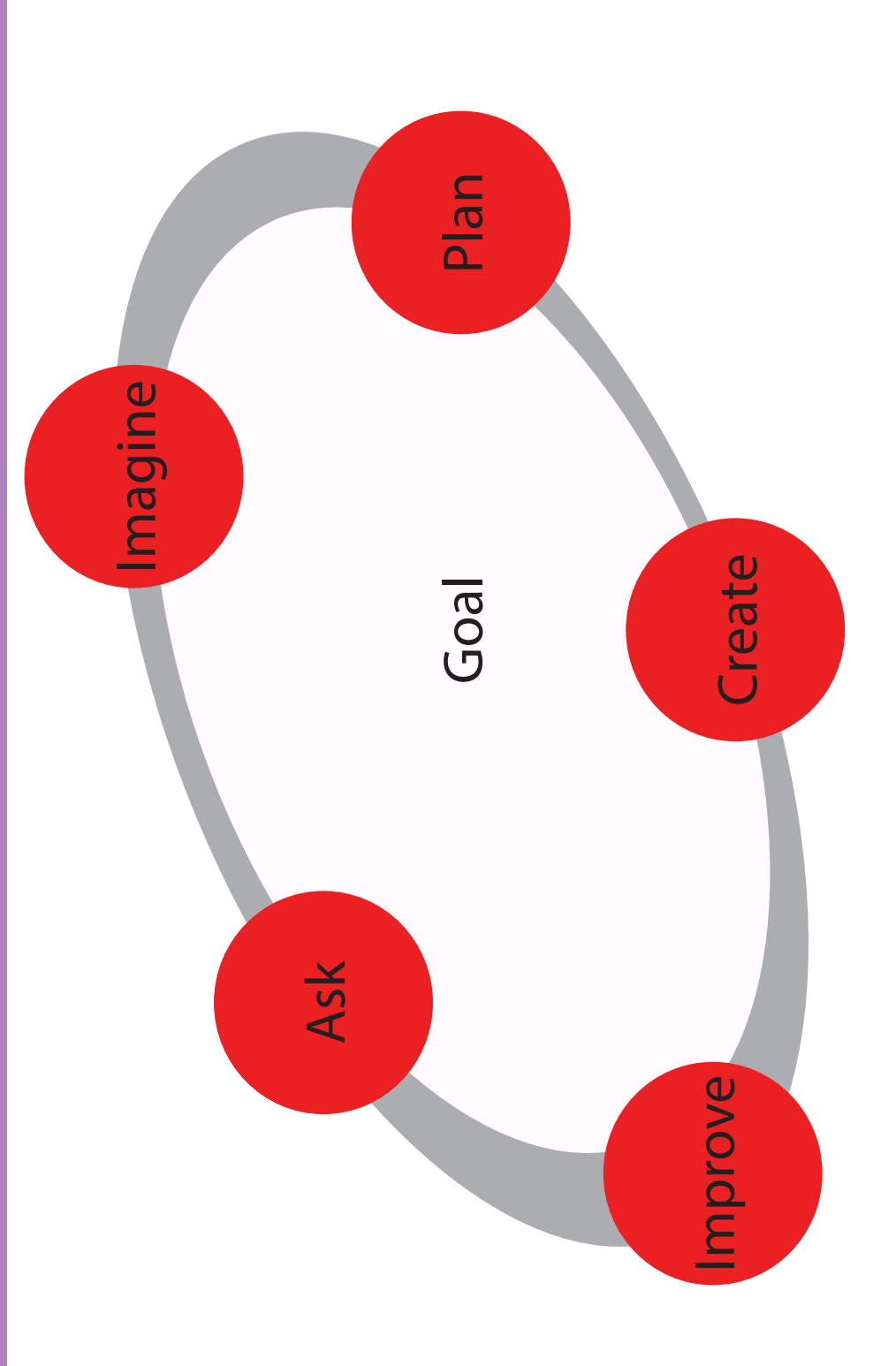
1. Gather kids together to reflect. Ask:
  - **What types of problems do engineers solve?** *Engineers solve problems that relate to designing or improving technologies. An Engineer's job is not to fix things that are broken.*
  - **What tool do engineers use to help them solve problems?** *The Engineering Design Process.*
2. Tell kids that they will use the Engineering Design Process themselves as they move through the unit! Give kids time to record their thoughts in their Engineering Journals.



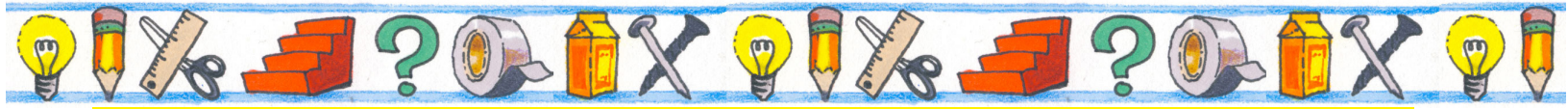
# What is Engineering? Tools of the Trade



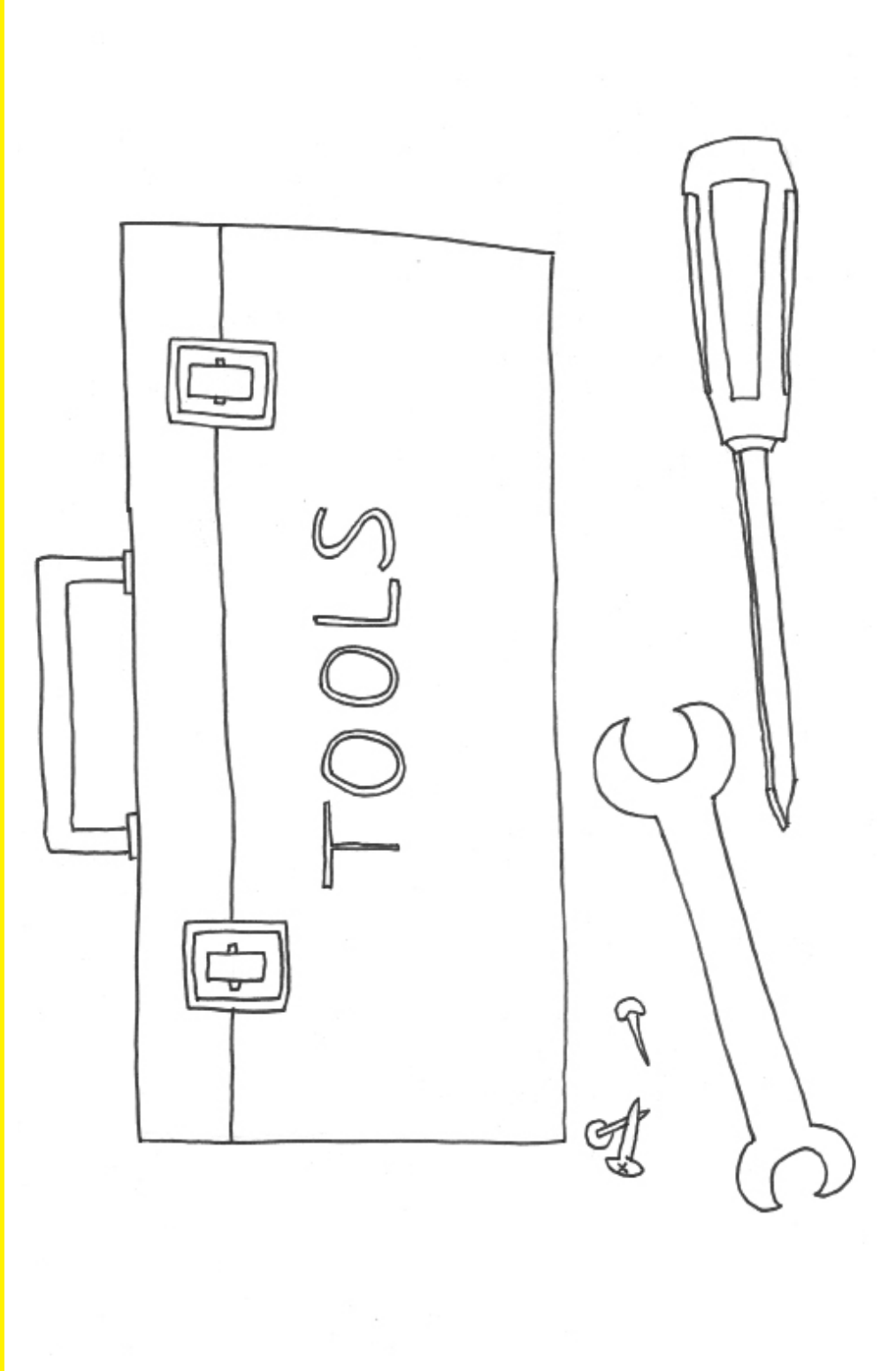
## The Engineering Design Process



# What is Engineering? Tools of the Trade

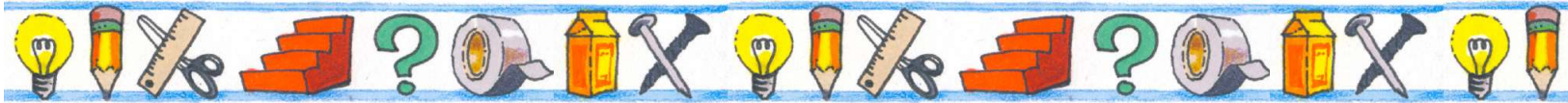


## Tools





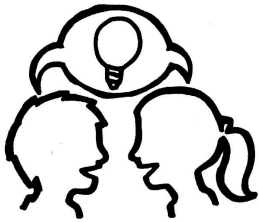
# What is Engineering? Wind Powered Vehicles



**Overview:** Kids will engineer a vehicle that will move as far as possible using only three puffs of air for power.

**Note to Educator:** Who are engineers? Engineers are people who use science, math, and creativity to solve problems. Today kids will be engineers as they use the Engineering Design Process to design wind powered vehicles.

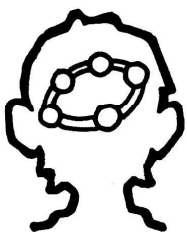
Set the Stage (5 min)



Activity (35 min)



Reflect (5 min)



## Materials

### For the entire group:

- EDP Poster
- Example Vehicles*, p. 5
- 10 foam trays
- 100 index cards
- 8 pairs of scissors
- 50 brass fasteners
- 30 paper or foam cups
- 30 drinking straws
- 8 rolls of tape
- 8 rulers
- 100 craft sticks
- 20 plastic grocery bags
- 30 sheets of construction paper

### For each group of 3-5 kids:

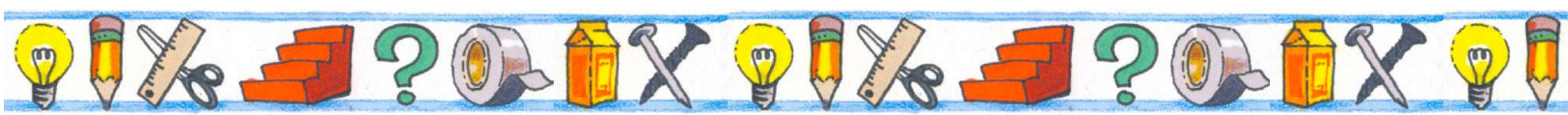
- Masking tape
  - 1 pair of scissors
- For each kid:**
- Reflect Page*, p. 7

## Preparation

*Time Required: 10 minutes*

1. Copy one *Reflect Page* for each kid.
2. Optional: Make samples of the items found on *Example Vehicles*.

# What is Engineering? Wind Powered Vehicles



## Kids will learn:

- the Engineering Design Process is a tool they can use to help solve problems.



## Set the Stage (5 min)

- Tell kids that today they are going to be engineers and use the Engineering Design Process to solve a problem.
- Tell kids that a fictional car company has asked them to create an air powered vehicle. Kids need to create a vehicle that will move as far as possible using only three puffs of air from a group member for power.
- Show groups the Engineering Design Process poster and tell them they are going to Ask questions about the problem, Imagine ways to solve it, Plan a design, Create and test it, and then think about ways to Improve it.
- To check for understanding, ask:
  - What is the problem the company wants us to solve?** *Engineer a vehicle that can move using only three puffs of air.*



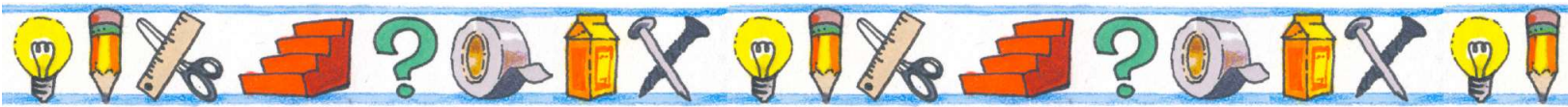
## Imagine (5 min)

- Tell kids it's time to look at the materials they can use and Imagine different ways to make them work.
- Split kids in groups of 3-5 and have them walk around the Materials Store. Ask:
  - Can you Imagine any ways you could use these materials to engineer a vehicle?**
- If your kids want to see examples, show them the samples you prepared, or have them look at *Example Vehicles*. Ask:
  - Do you think any of these ideas might work well? Why?**

## Plan and Create (at least 20 min)

- Tell kids it is time to plan and create their vehicles.
- Explain that:
  - The challenge is to work in groups to engineer a wind powered vehicle that will move as far as possible with three puffs of air for power.
  - Each group will have (at least) 20 minutes to create.
  - You can only use five materials in your design. The scissors are a tool only and cannot be used in the vehicle.
- As groups work, circulate around the room. Ask questions like:
  - Why do you think your design will work well?**

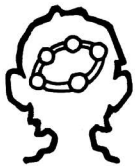
**Tip:** If you can, you may want to offer more time for this challenge.



- Which step of the Engineering Design Process are you using right now? How do you know?

### Engineering Showcase (10 min)

1. Have each group present their vehicle. Ask each group questions like:
  - Can you tell me about your design?
  - What parts of your design are working well?
  - Which steps of the Engineering Design Process did your group use?
2. Pick a starting point on a table top and mark it with tape. Each group will get 3 puffs in order to make their vehicle move as far as possible.
3. After testing, ask:
  - What parts would you improve if you could design your vehicle again? Why?



### Reflect (5 min)

1. Go through the Engineering Design Process poster with kids and have them talk about how they used each step to solve the problem. Ask questions like:
  - How did you use this step of the Engineering Design Process to solve the problem? *We Asked about the challenge; we Imagined ways to build with the materials; we Planned when we decided what design to use; we Created and Improved when we built and fixed the vehicle.*
  - Why do you think it's important to use these steps? *It helps us keep track of our ideas and make sure we're meeting our goal.*
  - Do you think you are an engineer? Why?
2. Tell kids that they've just used the same steps that engineers use to solve problems. This means that they are engineers, too!
3. Give kids time to record their thoughts on the *Reflect Page*.

## Extensions

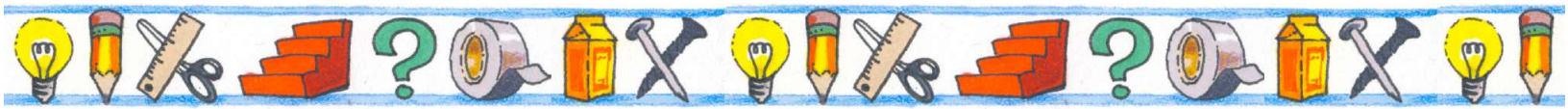
### Try Again!

Does your design work the same way on a different surface, like a sidewalk or a tile floor? Can you improve your design so it works on a few different surfaces?

### Transporting “Passengers”

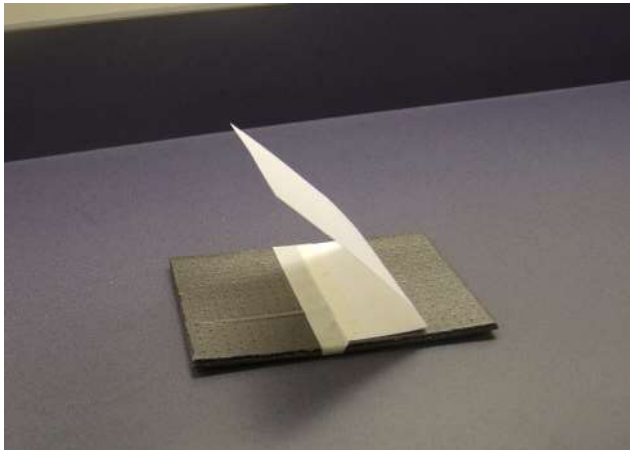
Can your vehicle transport passengers? Use small weights or beads to represent people. How many passengers can your vehicle carry? Does it go as far when you add weight?

# What is Engineering? Wind Powered Vehicles



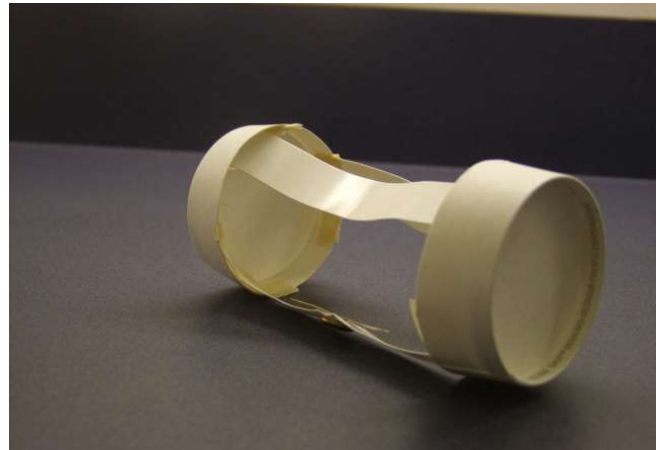
Here are three different example of air powered vehicle designs.

An index card that works like a sail taped onto a piece of foam.



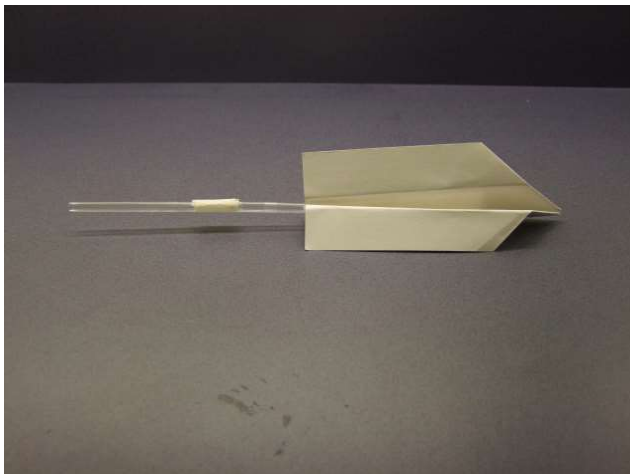
Slide!

The bottoms of two paper cups held together with paper cup strips.



Roll!

A paper airplane powered by shooting it out of a straw.

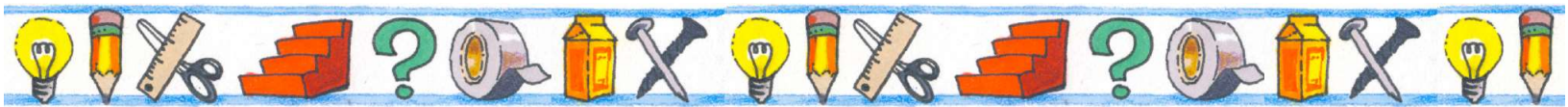


Fly!

Will any of these ideas help your group build a vehicle?  
What other ideas do you have?

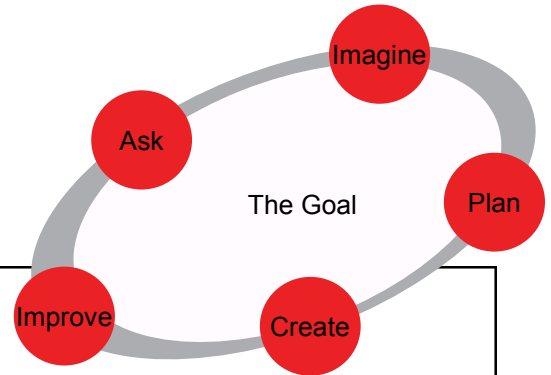
Talk with your group to figure it out!

# What is Engineering? Wind Powered Vehicles



## Draw Your Vehicle

Use the space below to draw a picture of your vehicle. Circle the parts you would improve.

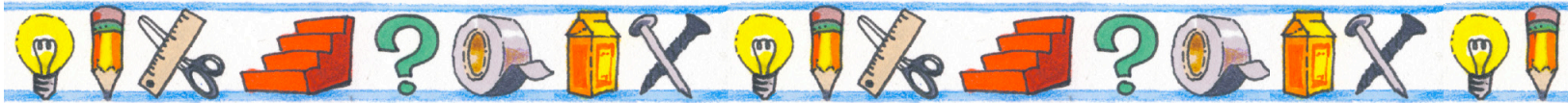


## For the Record

I think engineering is:

- Fun
- Exciting
- Difficult
- \_\_\_\_\_

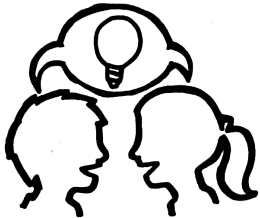




**Overview:** Kids write and perform songs that explain the steps of the Engineering Design Process.

**Note to Educator:** The Engineering Design Process is a tool that is used by engineers as they solve problems. Kids will naturally use all of these steps when they engineer, and may find it useful to specifically refer back to the steps of the process if they are stuck when solving a problem. Today kids will get the chance to make the steps of the Engineering Design Process their own as they create a song that highlights the steps.

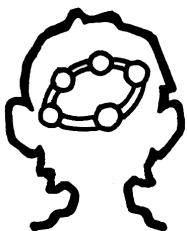
Set the Stage (5 min)



Activity (30 min)



Reflect (10 min)



### Materials

**For the entire group:**

- EDP poster

**For each group of 3-5 kids:**

- paper
- pencils/crayons
- musical instruments or other supplies kids can make music with (optional)

### Preparation

*Time Required: 10 minutes*

1. Plan to have kids work in groups of 3-5.



# What is Engineering? EDP Song



## Kids will learn:

- the Engineering Design Process is made up of steps that can help them solve problems.

### Set the Stage (5 min)



- Show students the Engineering Design Process poster. Explain that the Engineering Design Process is a tool that all engineers use to help them solve problems.
- Tell kids that today they will have the chance to share the steps of the Engineering Design Process with others by creating a song about it. Ask:
  - Why do you think these steps are important to use when solving a problem?**
  - Can you think of a time when you used some of the steps to help you do something?**



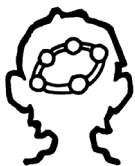
### Create the Song (20 min)

- Give each group paper and pencils, crayons, and other fun supplies to make music with.
- As groups work, circulate around the room. Ask:
  - What will your song sound like?**
  - What will you say about each step of the Engineering Design Process?**
- Let groups know when they have 5 minutes left, 2 minutes left, etc.

**Tip:** If kids are having trouble coming up with a song, encourage them to use a well-known song as inspiration and change the words. For example, the tunes of Happy Birthday, Twinkle, Twinkle Little Star, or other simple, popular songs might provide good starting points.

### Sing It! (10 min)

- Allow groups to present their songs. Ask each group:
  - What do you think are the most important parts of your song? Why do you think so?**



### Reflect (10 min)

- Gather kids around the Engineering Design Process poster. Ask:
  - How did your group use these steps to create your song?**
  - Do you think writing a song is like engineering? Why do you think so?**



