MAKEngineering Kit:

Treasure Adventure

Inspired by *Pete the Cat and the Treasure Map* by James Dean

This engineering kit would not have been possible without funding and support from the National Science Foundation.

ENGINEERING TASK

Read the book, *Pete the Cat and the Treasure Map*.

In the story, Pete the Cat and his friends go on a treasure hunt. Their ship is built to withhold the storms and carry the treasure back to their home.

Your **engineering task** is to build a boat that will hold your treasure.

DID YOU KNOW…?

People have been building water crafts for a very long time. The first boat was said to be built thousands of years ago!

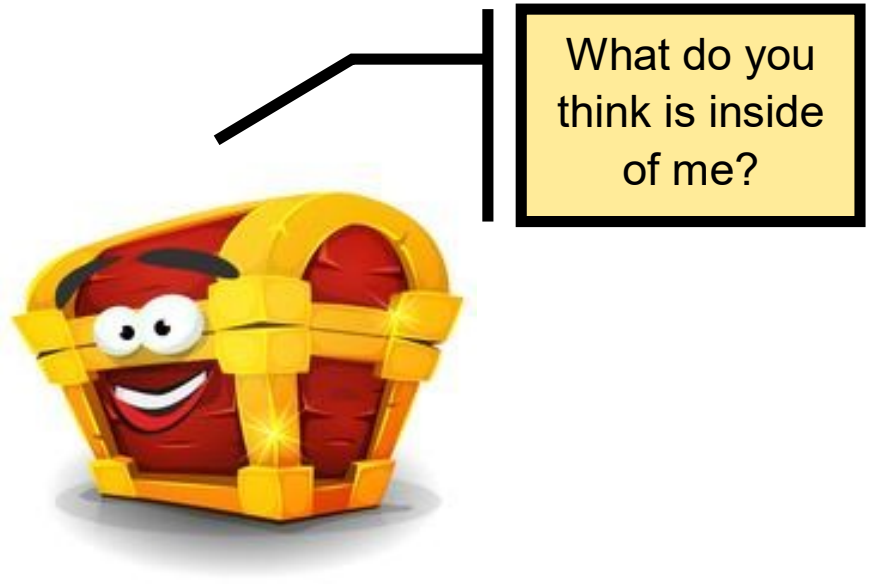
Pesse Canoe

Image: Kids Encyclopedia Facts

Now, the ships are designed and cared for by marine or naval engineers.

MATERIALS IN KIT

- Gold Painted Rocks (Treasure)
- 15 Craft sticks
- 5 Rubber bands
- 10 Straws
- Masking Tape
- Measuring Tape

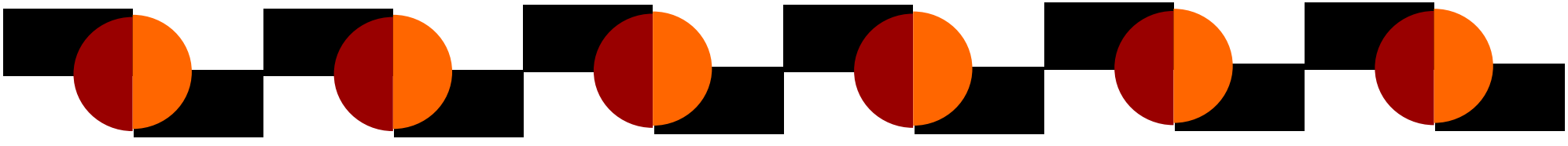


You will also need recyclable materials (e.g., egg cartons, paper towel rolls, food boxes), scissors, paper, and pencil.

MATERIALS IN YOUR HOME—TREASURE HUNT

In addition to using materials from the kit, you can find items inside and outside your house that start with the letters below. Only one object per letter, but you can have more than one of that object. For example, for the letter P, you can use 15 paper clips or maybe 5 purple crayons. Get creative!

A C E F M P S T



STEP 1—RESEARCH

There are many different kinds of boats. How many types of boats can you think of? Draw or ask someone to help you write them all.

For more types of boats, watch these videos.

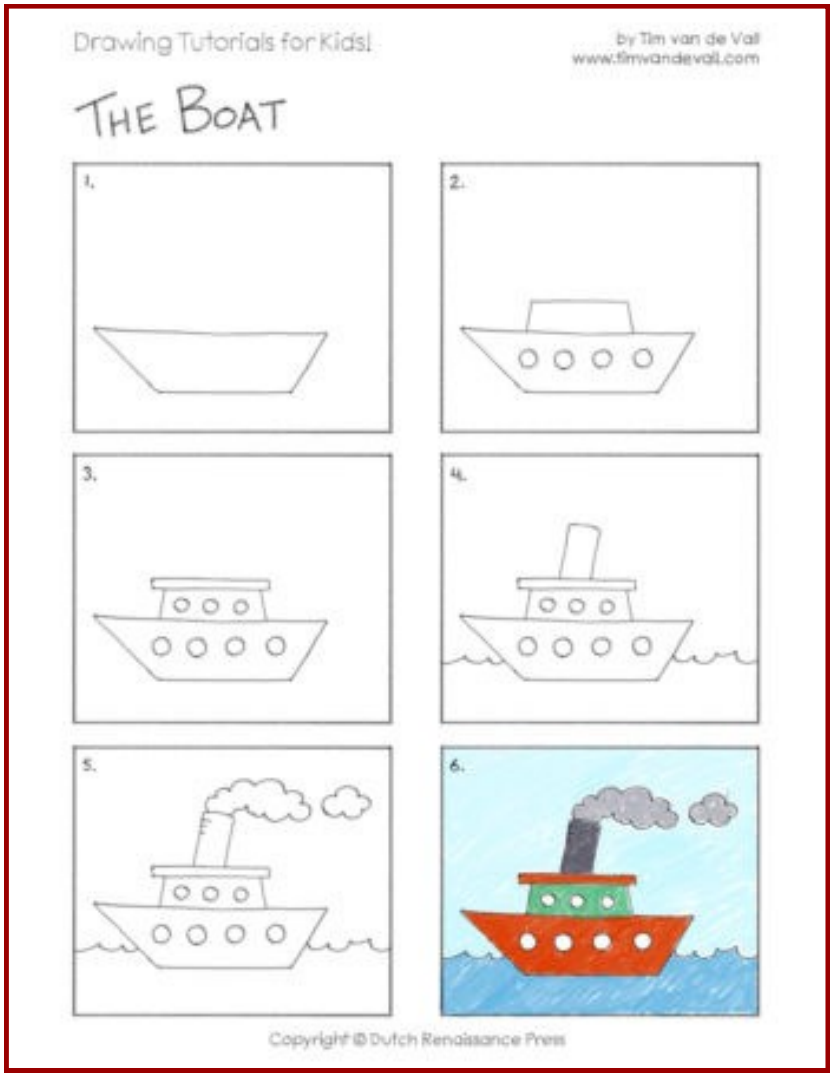
https://youtu.be/KhqHGXw-gmE

https://youtu.be/miw_ONNOU8s

STEP 1—SUPPORT

Optional questions to ask after watching the videos:

- What was your favorite boat in the video? Why?
- “Do you remember…?” Relate to prior experiences with boats or where you have seen a boat such as in a movie or cartoon.
- Which type of boat would be suitable to hold our treasure? (Explore the treasure rocks.) Tell me why.
- I noticed _____ about _____(e.g., a canoe). What do you think?



STEP 2—PLAN

Based on your research, design/sketch 3-4 boats and make a list of materials for each design. All ships have names, so you should name each of your designs.

STEP 3—CREATE

Pick one of your designs from Step 2. Build something that will carry your treasure across **STORMY** water.

STEP 4—TEST & IMPROVE

Will your boat carry your treasure?

Place your boat in a bucket or a tub of water. Gently put your treasure (golden rocks) inside your boat and let it go. Did your boat stay afloat or did it sink? Can you add another rock? What changes or improvements might we make? Why?

Draw or tell a story to describe what happened.

STEP 4—SUPPORT

Optional questions to ask:

- Would you consider this test a success or failure? Tell me what happened that made you think this.
- I noticed _____. (Note something positive about the test.)
- Based on the test, what should we try next? Why do you think this?
- What do you think would happen if we used a hairdryer or a fan to make **STORMY** water?
- I have two suggestions, but you can pick which one you want to try before we test again.

COMMUNICATE

Engineers have to be able to talk about their process and their prototype to a wider audience. We want you to create one of the following to tell someone else in your family or a friend about how you built a boat to hold a treasure.

Create a story. Or how about a song? Or maybe a picture book full of drawings.

Psst. Who might your characters be?

DID YOU KNOW…

There are engineers that create things that can work in environments like the ocean? They are called ocean engineers. Watch this video to learn more:

https://youtu.be/OhfpJeXX9Js

And did you know that oceans cover about 70% of the Earth's surface? Also, did you know that there about one million species of animals that live in the ocean? (We suggest having a discussion about the size of one million and/or a visual to show 70%.)

SHARE THE FUN AND PASS IT ON!

Thank you for participating.

When you are done with this project, gift the book and the directions to your friend to make the idea of engineering float.