

STEM

Science | Technology
Engineering | Mathematics

CANOE EXPERTS

RED FLOWER CAMP Outdoors



THE ADVENTURE:

Design and build a canoe out of everyday materials. Test your design for strength and speed to explore how canoes are designed.

PLAN:

- Do you want to do this adventure inside, outside or at camp?
- Where will you test your boats? Do you have access to a sink or tub?
- What materials will you use to build your canoe?
- How will you form your groups?

DO:

Activity #1: Build a Boat

- In your group, consider the materials you have. How can you use them to build a canoe?
- Think about how you want to build your canoe. Design it, then build, test and tweak your canoe.
- Remember that there are two tests: strength and speed. Your canoe needs to be able to withstand both tests.
- Design a flag for your canoe. The flags will help identify each group's canoe, and must be attached to the canoe during the speed test.

Activity #2: Which is Strongest?

- When each group has finalized their canoe, put your canoe in the water.

- Think about where the marbles should go in your canoe. What will allow the canoe to stay afloat the longest?
- One Howler will begin to put marbles on the canoe until the boat capsizes.

Activity #3: Race!

- After the strength test, it's time for the speed test. Make any needed adjustments or repairs to your canoes.
- In a long bucket or tub, push the canoe gently and use a timer or stopwatch to measure how far it goes and how long until it stops.
- Get back together with your group and try to make your canoe go faster.
- Test your canoes again.

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It starts with Scouts.

REVIEW:

- What do you know now that you did not know before?
- What materials were most useful? What materials were least useful? Why?
- Were the canoes that went faster the same boats that had the largest number of marbles?
- How were the strongest canoes shaped? What did you do to make the canoe stronger? Why?
- How were the fastest canoes shaped? What did you do to make the canoe go faster? Why?
- What elements of STEM were in this adventure? Science? Technology? Engineering? Mathematics?
- What did you like about this adventure? What did you not like about the adventure?
- How would you do this adventure differently?

MATERIALS:

- Water
- Tubs or buckets for the weight test
- A long tub for the speed test
- 100 marbles or similar small objects of equal size

For each group of Cubs:

- 6 popsicle sticks
- 2 small pieces of sponge
- 4 straws
- One piece of clay
- 4 rubber bands
- 30 cm x 30 cm sheet of aluminum foil

ONLINE RESOURCES:

- Buoyant Boats
- Boat Building Contest

