PAPER TUBE ENGINEER

RED FLOWER CAMP
Outdoors

THE ADVENTURE:

Not all structures are created equal. Two structures that use the same or similar materials may be very different, and have different strengths. Use paper tubes and other materials to build a step-stone bridge that can support the weight of your Lair as you cross a shallow river.

PLAN:

- Where will you share this adventure? Indoors, outdoors or at camp?
- Do you have access to a small stream that is no deeper than the toilet paper tubes? If not, how will you build a river to cross?
- How will you clean up after this adventure?
- How many toilet paper tubes will each group need? How long will you need to collect toilet paper tubes at home?
- How will you form your groups?

DO:

- As a group, use toilet paper tubes to build stepping stones that will help you cross the river.
- Your stepping stones should be strong enough for all members of the group cross the river.
- If a group member falls in the river, redesign your stepping stones to make them stronger.

REVIEW:

- What do you know now that you did not know before?
- Why do you think the paper tubes are strong enough to hold your body?
- How did you make the tubes stronger? Why do you think one method was better than another?
- What did you do to protect the tube from the water?
- How did your team work together on this adventure?
- What elements of STEM were in this adventure? Science? Technology? Engineering? Mathematics?
- What did you like about this adventure? What did you not like? How would you do this adventure differently?

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MATERIALS:

- Toilet paper tubes (at least 10 for each group)
- Fillings (Sand, marbles or round pebbles, rough rocks)
- Aluminium foil or plastic wrap
- Masking tape (one roll for each group)
- A river (real or not)

ONLINE RESOURCES:

- Paper columns

SAFETY TIP:

- Never go near the water without an adult. What else do you need to know to be safe near the water?