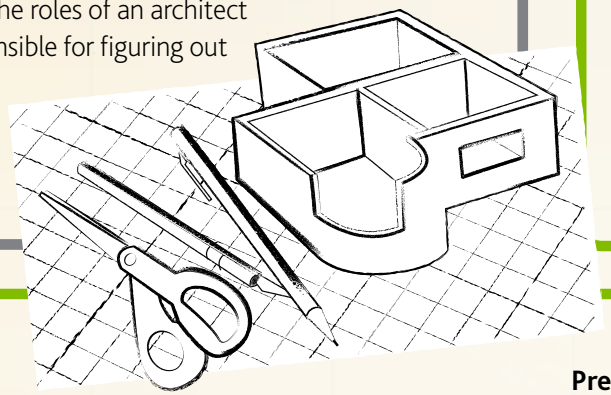
STEM | Science | Technology
Engineering | Mathematics

SCALE MODEL

CABOT TRAIL
Creative Expression

THE ADVENTURE:
Build a scale model of a campsite, a place or building in your community, or an historic landmark. You are playing the roles of an architect and an engineer, and you are responsible for figuring out the size of the model, choosing the materials for it and finally constructing the model so that it can stand on its own.



PLAN:
Choose the place, building or object of which you want to make a scale model (e.g. a campsite, someplace in the community or an historic landmark). Plan for a visit to the site to collect the necessary data (or, in cases of historical landmarks, you might be able to gather the information from online resources).

If you are designing a site, produce a scale drawing of it. For example, you can design your ideal campsite and determine where you would like to place your tents, your fire area, your latrine and your kitchen.

DO:

Collect the measurements:

- Collect all the measurements you think you would need to make the scale model. In some cases, you might be able to use a measuring tape, but you might need to come up with other creative ideas to calculate, estimate or research the dimensions (for example, the height of a tall building).
- In case of long or tall measurements, you can use the "distance computer" method. For more information, visit the link in the "Online Resources" or search "distance computer" online.

Decide on the scale:

- Decide how big you want to make your model and calculate the ratio. For example, if you want to build a 1 metre scale of a 20 metre building, you would need to divide all dimensions by 20. Your scale ratio would be 20:1.

Prepare the material:

- With the help of Scouters, decide how much of your chosen material you need. This can be an estimation which will be revised as you move forward with building the model.

Build the model:

- Build the model using the dimensions you have calculated. You have to come up with ideas for how to stabilize the pieces and make the model in a way that it will bear its own weight.
- As a Patrol, decide if you want to showcase your work for families and other community members.

REVIEW:

- What do you know now that you did not know before?
- How closely does your model match the original object?
- What challenges did you face when taking the measurements and building the model? How did you solve them? What new things did you learn in the process?
- If you were the original architect of the object of which you made the model, would you change anything? How and why?
- What jobs today require the making of models?
- What elements of STEM were in this activity? Science? Technology? Engineering? Mathematics?
- What did you like about these activities? What did you not like? How would you do them differently?

ONLINE RESOURCES:

The Distance Computer

MATERIALS:

The materials depend on the project and the scale. You might also need some additional tools, depending on the material you choose to use.

- Measuring tape
- Calculators
- Cardboard or foam board (or other material of choice)
- Glue gun
- Tape
- Scissors