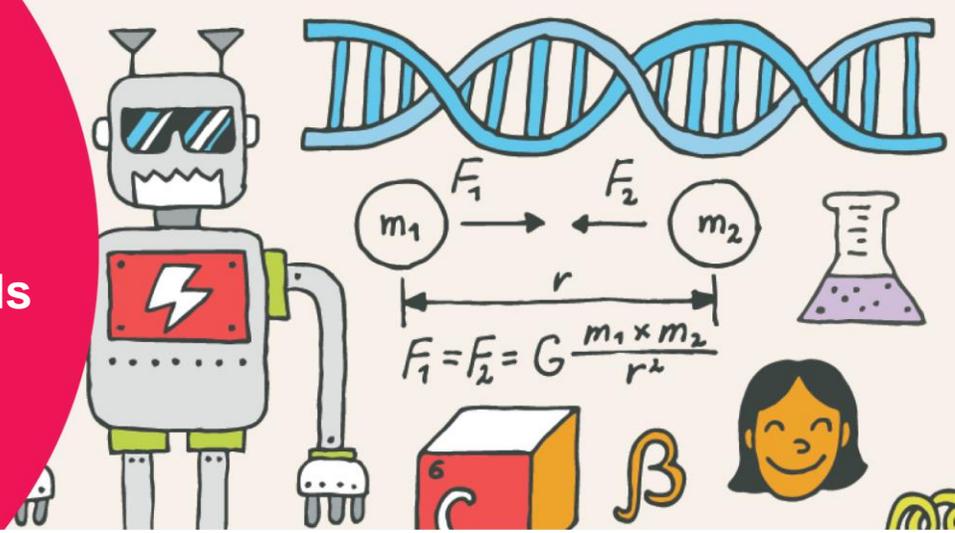


Living Tiny

Activities to engage minds
before and after your
museum visit



BEFORE YOUR VISIT

Activity 1: Estimate the area of your home!

Learning objective

Students will be introduced to the idea of the tiny house. They will compare the dimensions of the tiny house to the dimensions of their own home.

Introduction

While the definition of a tiny house varies, *Tiny House Community*, an enthusiast group dedicated to living tiny, defines a tiny house as being a residential building of approximately 37m² (or less than 400ft²).

Tiny house living is a dramatic departure from the comparatively large homes that fill our cities and suburbs. Tiny houses present many environmental and economic advantages, but they also present their own challenges. In this activity, leading up to your visit to the Canada Science and Technology Museum, you will gather data on your own home, consider what it's like to live large, and determine if you have what it takes to live tiny.



This activity package was produced in collaboration with University of Ottawa Faculty of Education students Joshua Clark, Firas Ismail, Kevin Ladstaetter, Kenneth Wardroper, and Scott Young.

Part 1

Materials

- Measuring tape

Instructions

1. In this part, you will estimate the area of your home by calculating the area of each above-ground room. Complete the following chart, noting the room, its dimensions, and the area that you calculate. For an oddly shaped room, feel free to approximate it as a rectangle.

To find the area of a rectangular room, multiply the length of the room by the width of the room.

Be sure that you are being consistent with your units! Your final answer should be expressed in square metres.

Room	Length (m)	Width (m)	Area (m ²)
Example: Bedroom	4	3	12

2. When you have completed measuring and calculating the area of each room, carefully add the areas together to estimate the area of your entire home.

The area of my home is approximately _____

3. Now that we have an estimate for the area of your home, let's compare it to the area of a tiny house! Using the area of your home calculated above, input your value below to determine how much bigger your home is than a 37m² tiny house.

$$\left(\frac{\text{Area of your home (m}^2\text{)}}{\text{Area of a tiny house (m}^2\text{)}} \right) = \text{Number of times larger your home is than the largest tiny house}$$

$$\frac{\text{_____}}{37 \text{ m}^2} =$$

Consider how many times larger your home is than the tiny house. You're living large! But how much of the space in our own homes do we really use? When you think about it, you may be surprised that you and your family really only use a few rooms of the home. In the next part, you will explore how you use the space in your home and if you a tiny house might work for you!

Part 2

Learning objective

Students will calculate the area of their homes that is most used, then compare that area to the overall area of their homes and to the area of the tiny house. They will consider some of the differences between living in a standard home and a tiny house.

Instructions

1. Thinking about the rooms of your home that you measured for Part 1, sort the rooms into the two categories below, based on the amount of time that you spend in them.

Lots of time	Very little time

2. For the rooms where you spend most of your time, add together the areas of those rooms based on the areas that you calculated in Part 1.

The area of the **most** used rooms in my home _____

3. In the space below, describe how the area of rooms that you use the most compares to the entire area of your home. How does this compare to the area of the tiny house we are considering (37m²)?

4. During your visit to the Canadian Science and Technology Museum, you will see first-hand what living in a tiny house might look like. In the space below, describe one challenge that you think you might face living in a tiny house, and one aspect of living in a tiny house that you think you would enjoy.

5. Lastly, do you think you have what it takes to live tiny? Describe whether or not you believe you could live in a tiny house.

Activity 2: Angler's cabin

Learning objective

Students will prioritise the necessary items to have in a home, and brainstorm options to optimize space in a home. They will evaluate the advantages and disadvantages of living in a smaller space.

Introduction

An angler is trying to catch a rare and elusive "Sasquatchfish." He has bought a plot of land to build a cabin in the cold north, where he'll stay for weeks at a time while he tries to catch one. The angler needs the necessities of life, but has a limited amount of siding for walls and a limited amount of money for furnishings.

Instructions

1. First, ask the class what we need to live in a cabin for a week at a time and draft a list on the board. Answers may include: beds, tables, food, cabinets, sinks, fridges, lighting accessories, toilets, and heating/gas implements. Other answers may be more luxurious and surprising.
2. Remind students, if they have not yet mentioned relevant items, that in addition to having enough space, the fisherman requires heat, water, and waste disposal for the cabin.
3. Split the class into two halves. One half will serve as the walls of the cabin, with their arms outstretched. For the second half, assign a role to each student for each item/furnishing on the list; these students must orient themselves in a way that the fisherman can easily navigate his way around the cabin.

Item suggestions & approximate number of students for the role

- | | |
|---|---|
| - Fridge (one student) | - Chairs (one student each) |
| - Counter w/ cupboards (one counter/cupboard per student) | - Kitchen island w/cupboards (two students) |
| - Kitchen sink (one student) | - Television (one student) |
| - Dishwasher (one student) | - Bed (two students) |
| - Oven (two students) | - Heater (one student) |
| - Microwave (one student) | - Toilet (one student) |
| - Garbage bin (one student) | - Bathroom sink (one student) |
| - Big table (two students) | - Bathtub (one student) |
| - Small table (one student) | - Floor lamp (one student) |
| | - Walls (half of the class) |

If there are too many items, it should result in not having enough students for each role. This can be adjusted by reassigning students from an item role to a wall role (making the cabin smaller). Let students experiment with the room's shape as well (even making walls if they like).

The teacher or volunteer student may act as the angler trying to get around the cabin.

Students should realize that some of these furnishings are not necessary, since they reduce the available walking space of the cabin.

Discussion

1. **Ask students:** Why is space important?
2. **Ask students:** What else they could do to increase the space of the cabin but maintain the necessities of the cabin?

E.g., Remove items we do not need (dishwasher, kitchen island, TV), move items to unused spaces (garbage bin underneath sink), push the table against the wall.

3. **Ask students:** What are some disadvantages to living in a larger space?
 - Larger spaces need more energy to heat
 - They use more energy to illuminate
 - They need more materials to build and maintain
 - All of these factors make them more expensive and more wasteful

AFTER YOUR VISIT

Activity 3: Tiny House design competition

Learning objective

Students will design a tiny house of their own and assess the efficiency of their use of space.

Introduction

In groups of two to four people, design an innovative and creative “Tiny House” equal to or less than 37 m². Please ensure that your Tiny Home design is one floor only.

Materials

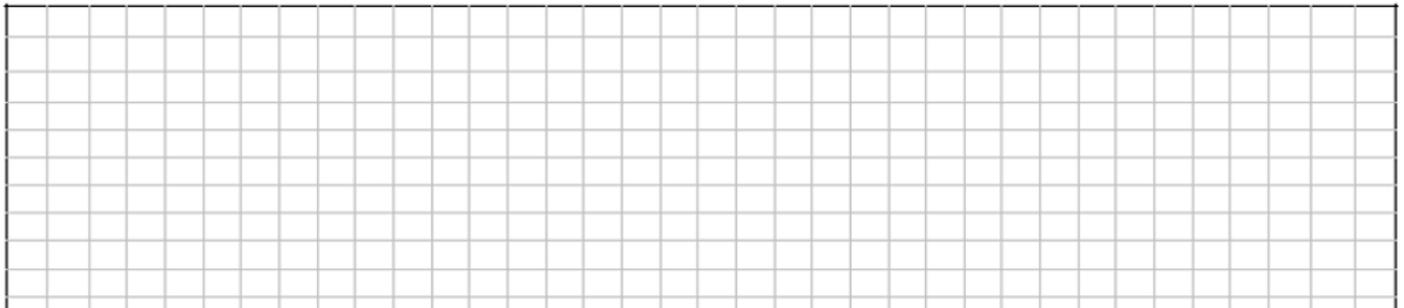
Instructions for students

1. Gather ideas for your home design while at the museum’s Tiny House immersive experience.



2. Sketch your team’s unique Tiny House floor plan design on the grid paper provided.

Team Name: _____ Project Name: _____ Date: _____



3. Using the free home design software Sweet Home 3D, draw your team's design which you will present to the class — complete with walls, windows, material, and furniture selections.

<http://www.sweethome3d.com/>

4. Watch the video: "Sweet Home 3D for beginners"

https://www.youtube.com/watch?v=iWk9-mKE9G8&feature=emb_title

Class presentation:

For your presentation to the class you should have:

- a floorplan
- a minimum of two interior images from your S design

Dimensions do not have to be labelled on the final images, but you do need to indicate the total area of your tiny house as well as the area of any individual rooms inside the house (if you have more than one). Bonus marks may be given for any exterior plans/3D sketches (hand-drawn sketches are acceptable) you wish to include in your presentation. How you choose to present your design to the class is entirely up to you.

Tiny House requirements:

Your house should be livable and have:

- a footprint equal to or less than 37m²
- appropriate spaces for sleeping, eating, cleaning, and moving around
- a toilet (no outhouses)
- somewhere to shower/bathe
- a sink
- somewhere to store food (i.e. refrigerator or cooler)
- storage for clothes, tools, games, and other miscellaneous items
- somewhere to sleep

If you choose to meet any of these requirements in a non-traditional way, this should be explained somewhere in your presentation. Feel free to go above and beyond these requirements as well!

Additional questions to consider:

- What was the total area of your tiny house design? How much of this space will be used regularly?
- Could you make your tiny house even smaller? What changes would you make to accomplish this?
- Do you think that you could live in a tiny house? In what scenarios could living in a tiny house be the best option?



Team Name: _____

Project Name: _____

Date: _____

