#STEM4Parents
Haiti Orphanage

These activities and questions are designed for you to have engaging discussions with your student about the STEM jobs they are encountering in their Learning Blade schoolwork. Here is an overview of what is included.

Table Talk: These are questions you can ask your student without having any background knowledge in STEM. These will be easy conversation starters.

Dig Deeper: These are questions with suggested links to learn more about different STEM careers to explore with your student.

Home Lab: This is an easy, hands-on activity to do with your STEM student.

What Has Your Student Been Learning?

In this mission, your student is tasked to help build an orphanage in Haiti after a massive earthquake destroyed much of the area leaving many people homeless. If they complete each activity the will build a safe and sustainable orphanage. Along the journey students will need to determine what tools **(antibiotics, cell phone, earthquake science, green buildings and/or water purification)** and STEM careers **(architect, civil engineer, electrician and/or environmental engineer)** are needed to assist in building the orphanage.

TABLE TALK

Starter Question:
If you were to build your own dream house, what materials would you use to build it? What innovations would you incorporate into your design?

There are many interesting careers involved in the designing and construction of a modern building, are any of these careers interesting to you? Why or why not?

Helpful Hint:

Think about all of the different parts to a house such as a roof, walls, kitchen, insulation, wiring, lighting etc.

Think about all of the different roles required in building a house. Think about the people involved in jobs not directly connected with the construction of the house but associated with all the materials and tools required to effectively build the house.

DIG DEEPER

Resources for More Information:

In this section we provide a series of links and associated questions to DIG DEEPER on individual careers addressed in the Haiti Orphanage Mission. Feel free to explore these with your STEM student as you model curiosity and lifelong learning.

Civil Engineers have many different specialties they can work in, such as construction engineering and earthquake engineering just to name a few. Discuss where you think a civil engineer would fit into the design process of a building. Want to learn about the daily tasks and more specialties of civil engineers? Learn more at the link below.

http://www.civilengineeringdegree.org/career-options-for-civil-engineers/

Nurses are in high demand. The need for nurses is growing at a fast rate due to a growing and aging population. Have you ever been to the doctor and had a nurse talk to you? What did they do? Read about nurse responsibilities and different practices for nurses at the link below. Is there a particular type of nurse you are interested in? If so, why?

http://www.nursingworld.org/EspeciallyForYou/What-is-Nursing/Tools-You-Need/RNsAPNs.html

Have you ever heard of a building being **LEED Certified**? LEED stands for Leadership in Energy and Environmental Design. It is a rating system created by the U.S. Green Building Council which evaluates the environmental performance of a building. They also encourage builders to transition towards sustainable and environmentally friendly designs, or "**Green Building**". Look at 10 awesome LEED public projects here – then discuss which is your favorite and why.

http://www.usgbc.org/articles/10-super-rad-leed-public-projects

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HOME LAB

Build a Seismograph

How to Begin:

You may want to ask an adult to help with the scissors.

1. Take a box and open the top. Cut off the flaps and place the box so the open side faces you.
2. Cut a slit in the bottom border, on each side of the box, wide enough for paper to pass through.
3. Punch a hole on each side of a small cup.
4. Cut a small x in the bottom of the cup.
5. Put a marker through the x in the bottom of the cup.
6. Use clay or tape around the inside of the whole to secure the marker in place, so it doesn't move about.
7. Use string to suspend the cup from the box.
8. Add some objects like pennies to the cup for weight.
9. Thread the paper tape through the slits.
10. Put one end of the paper under the marker. Adjust the pen so that it writes on the paper.
11. Have one student shake the table simulating an earthquake as another slowly pulls the paper through the slits.
12. Experiment with your seismograph on different surfaces as you try to create vibrations.

Example:

Materials

- Cardboard box
- Plastic cup
- Felt tip markers
- String
- Cup of small rocks
- Marbles or bolts
- Clay
- Paper
- Scissors

Advice :

The more you shake the box, the wider the lines will be. Try pounding on the table and see what kind of lines it makes. Try making some changes to it so that it can detect really small movements, like singing or talking softly. You could also try making the holes in the box closer together or adding more weight to the cup.

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Dear Parent/Guardian,

I kindly ask that you fill out and sign this piece of paper so I can provide your student with a completed grade for this #STEM4Parents homework assignment.

I discussed with _____ the Haiti Orphanage Mission in Learning Blade.
(student name)

_____
Student Signature

_____
Date

_____
Parent/Guardian Name (print)

_____
Parent/Guardian Signature