

STEM

Family projects



by
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SEPARATE FILES: Editable Letter to Families
Editable Project template
STEAM version of all materials

HOW TO USE



STEM Family Projects are the perfect way to create meaningful connections between the school and home for science, technology, engineering, and math processes. They may be used with any elementary grade level and are ideal for enrichment purposes.

There are 12 project ideas included, one for each month of the year, and a separate file includes EDITABLE forms. The provided parent letter is perfect to send home with the first monthly instruction sheet, as it provides a detailed explanation to parents regarding the projects.

You may also choose to copy and send home the provided Planning Sheet Reflection, or Extension options to allow for writing extensions and more structured STEM processes. An Assessment Rubric is also provided for more accountability.

Projects are designed to stimulate both inductive and deductive higher level thinking skills, and students may use any household items to construct their creations.

STEM Family projects



Date:

Dear Family,

Today, your child is bringing home instructions for his or her first STEM Family Project. STEM stands for Science, Technology, Engineering, and Math, and these projects are a terrific way to connect critical higher level thinking processes between school and home. Projects vary to promote inductive (inventive) thinking skills that will result in a wide variety of end product designs, to deductive thinking skills that instruct students to create similar products using their choice of designs and materials. As students construct their creations, they are encouraged to plan, test, and improve designs to the best of their ability.

Project instructions are simple and require nothing more than items around your home, such as paper goods, materials from nature, and basic crafting supplies. Your child is permitted to design and construct their project on his or her own, or with the assistance of family members. If you choose to assist your child with his or her creation, here are some guided questions that will help stimulate higher level STEM thinking:

- *What can your project be used for? What purpose does it serve?**
- *What problem could your project solve?**
- *How can you test your project to see how it works?**
- *How can you improve your project to make it better?**

I hope you and your child will enjoy constructing STEM family projects together this year. Please feel free to contact me with any questions.

Sincerely,

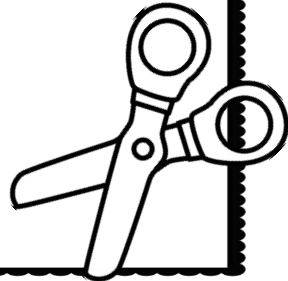


STEM Family project

Name: _____

Planning Sheet for _____

Materials



Ideas



My Blueprint



STEM Family project

Name: _____

Reflection Sheet for _____

What did you create?

What materials did you use?

Circle which intelligences or "smarts" that you used while designing and creating your project.

pictures/art, nature, music, self, people, logic/math and science, body, word

How does your project work?

How is your project useful? What problem does it solve?

What was most challenging about this project?

How could you improve your project?

STEM Family Project

Name: _____

Month of: _____ Due Date: _____



**create a model of a
Building or Shelter.**

- *You may use any items from home in your creation.**
- *You may work alone or with a family member.**
- *Remember to think like an inventor, be a problem solver, use your imagination, and have fun!**
- *We will display and present all STEM family projects at school!**

STEM Family project

Name: _____

Month of: _____ Due Date: _____



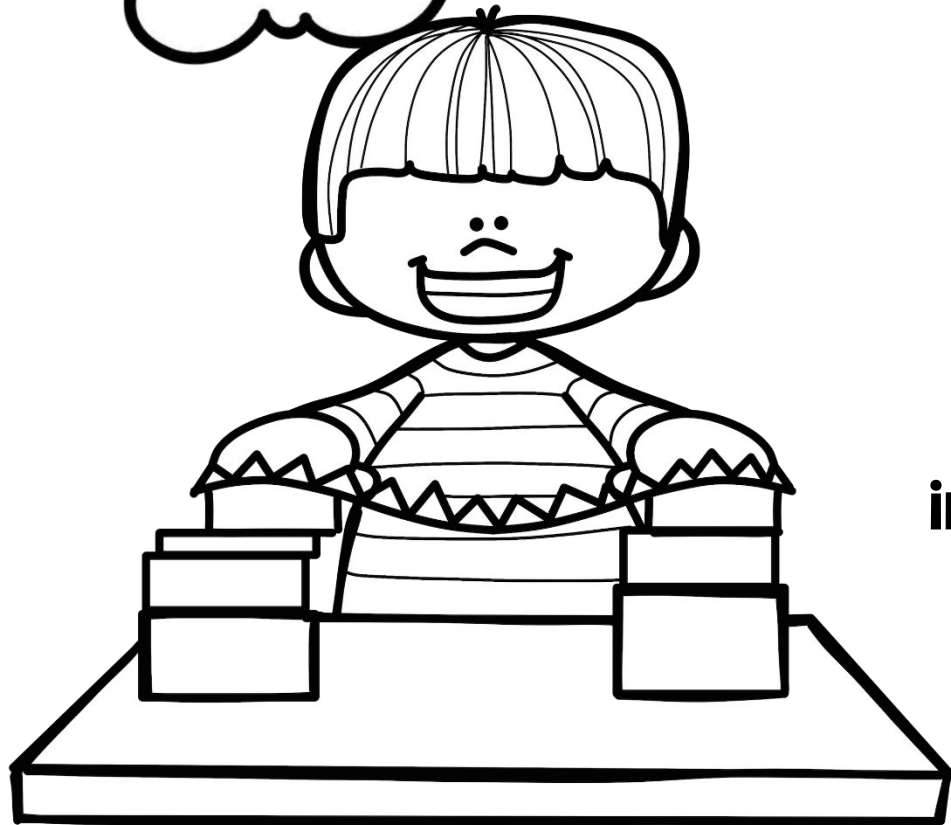
**create a model
of a Bridge.**

***You may use any items from
home in your creation.**

***You may work alone or with a
family member.**

***Remember to think like an
inventor, be a problem solver, use
your imagination, and have fun!**

***We will display and present all
STEM family projects at school!**



STEM Family project

Name: _____

Month of: _____ Due Date: _____



**create an
object that floats.**

- *You may use any items from home in your creation.**
- *You may work alone or with a family member.**
- *Remember to think like an inventor, be a problem solver, use your imagination, and have fun!**
- *We will display and present all STEM family projects at school!**

STEM Family Project

Name: _____

Month of: _____ Due Date: _____



**create a
musical instrument.**



***You may use any items from home in your creation.**

***You may work alone or with a family member.**

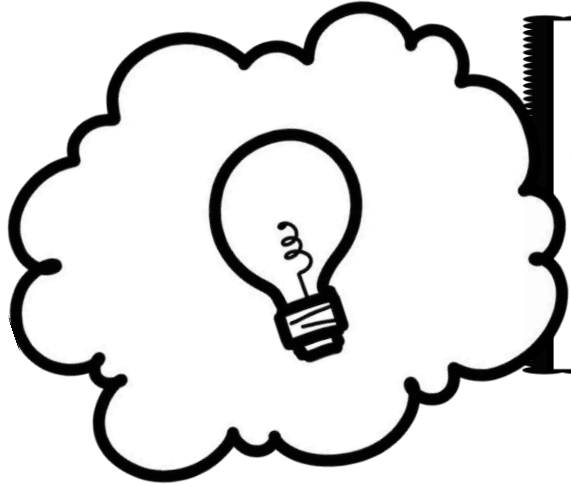
***Remember to think like an inventor, be a problem solver, use your imagination, and have fun!**

***We will display and present all STEM family projects at school!**

STEM Family Project

Name: _____

Month of: _____ Due Date: _____



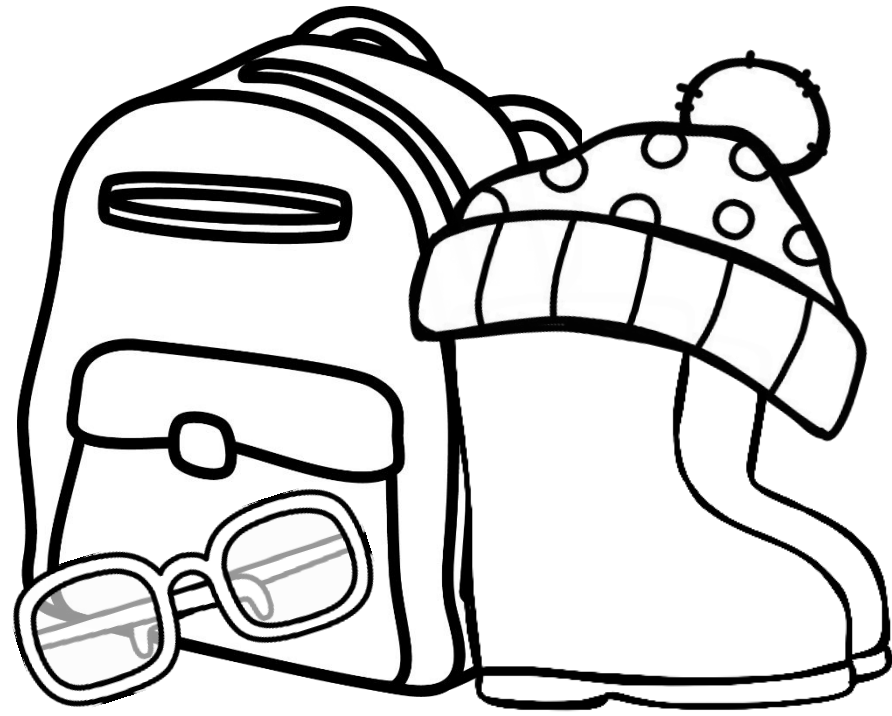
**create something useful
that you can wear.**

***You may use any items from
home in your creation.**

***You may work alone or with a
family member.**

***Remember to think like an
inventor, be a problem solver, use
your imagination, and have fun!**

***We will display and present all
STEM family projects at school!**



STEM Family Project

Name: _____

Month of: _____ Due Date: _____

A black and white line drawing of a young boy sitting on the floor, smiling. He is wearing a long-sleeved shirt and pants. Above his head is a large thought bubble containing a lit lightbulb. He is holding a paintbrush in his right hand and is in the process of painting a large, curved shape on the floor. To his left is a small cup with paint, and to his right is a larger bucket with paint and a paintbrush.

**create your own
game.**

***You may use any items from home in your creation.**

***You may work alone or with a family member.**

***Remember to think like an inventor, be a problem solver, use your imagination, and have fun!**

***We will display and present all STEM family projects at school!**

STEM Family project

Name: _____

Month of: _____ Due Date: _____



**create an object
that can move.**

***You may use any items from
home in your creation.**

***You may work alone or with a
family member.**

***Remember to think like an
inventor, be a problem solver, use
your imagination, and have fun!**

***We will display and present all
STEM family projects at school!**



STEM Family Project

Name: _____

Month of: _____ Due Date: _____



**create something
useful from
materials in nature.**

- *You may use any items from home in your creation.**
- *You may work alone or with a family member.**
- *Remember to think like an inventor, be a problem solver, use your imagination, and have fun!**
- *We will display and present all STEM family projects at school!**

STEM Family Project

Name: _____

Month of: _____ Due Date: _____



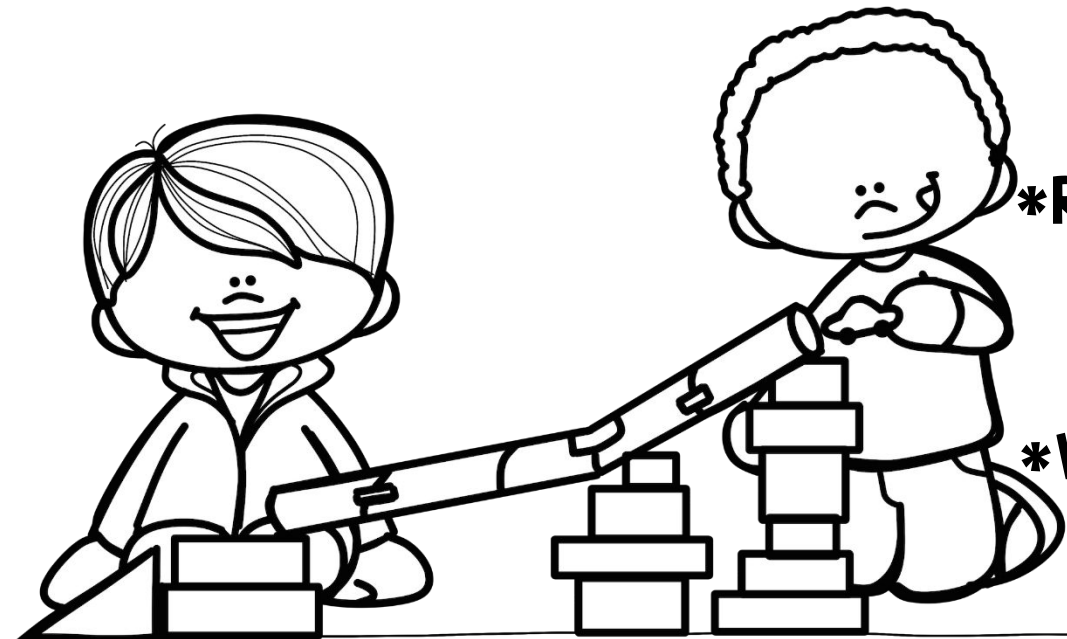
**create something
useful out of
paper goods.**

***You may use any items from home
in your creation.**

***You may work alone or with a
family member.**

***Remember to think like an inventor,
be a problem solver, use your
imagination, and have fun!**

***We will display and present all STEM
family projects at school!**



STEM Family Project

Name: _____

Month of: _____ Due Date: _____

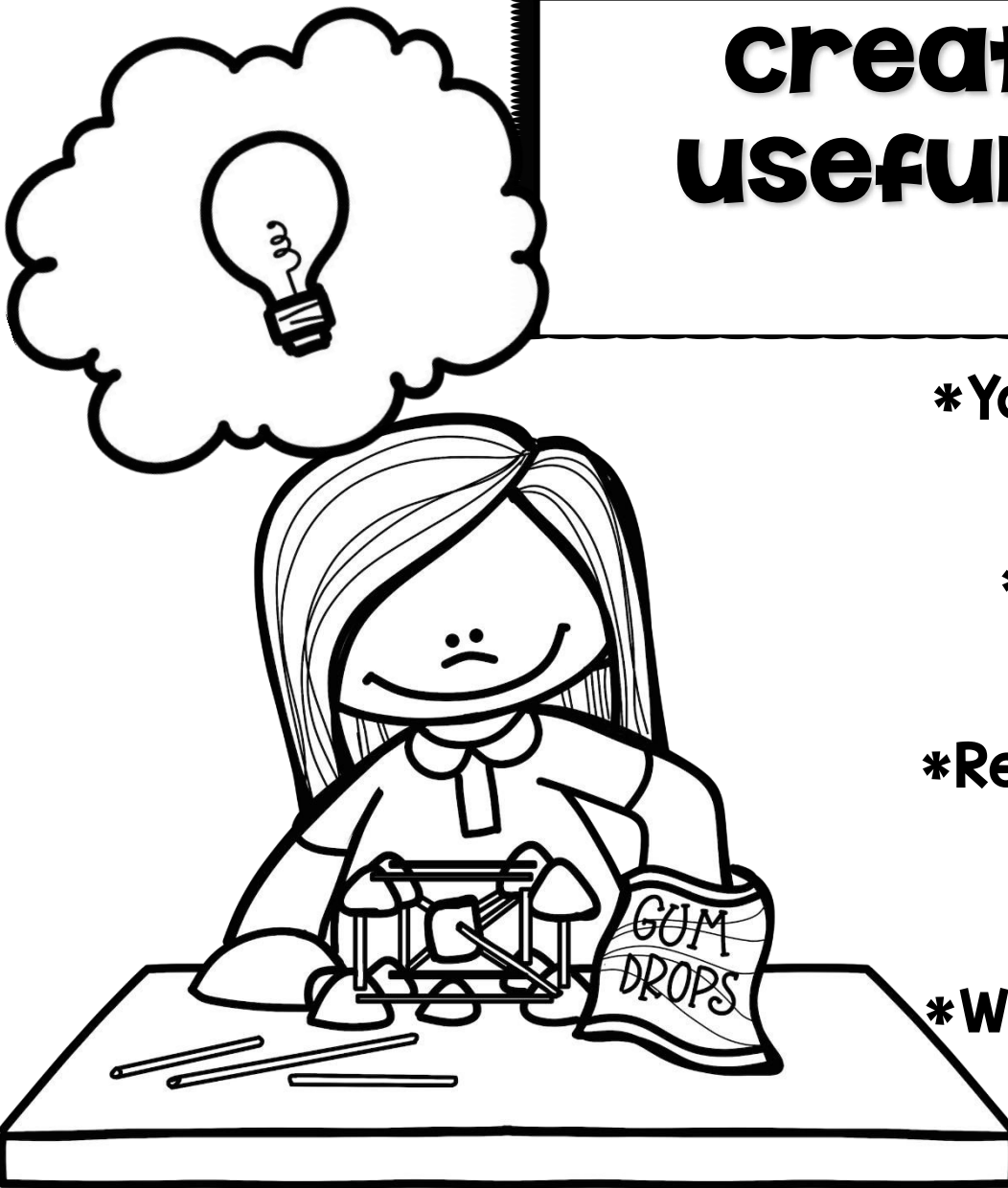
**create something
useful that includes
candy.**

***You may use any items from home
in your creation.**

***You may work alone or with a
family member.**

***Remember to think like an inventor,
be a problem solver, use your
imagination, and have fun!**

***We will display and present all STEM
family projects at school!**



STEM Family Project

Name: _____

Month of: _____ Due Date: _____



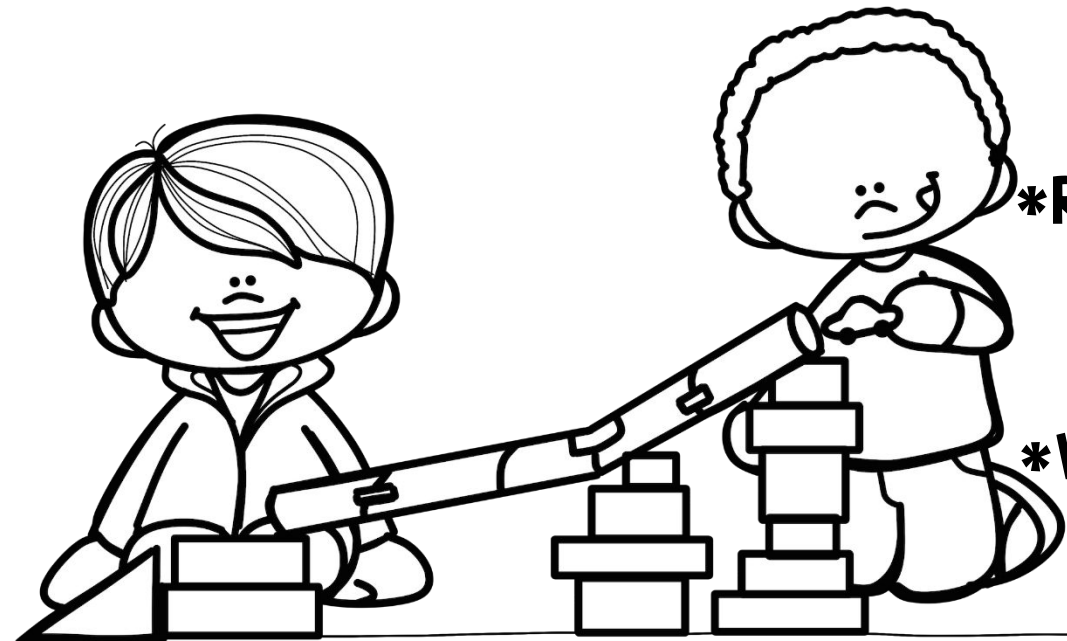
**create something
useful out of materials
that can be recycled.**

***You may use any items from home
in your creation.**

***You may work alone or with a
family member.**

***Remember to think like an inventor,
be a problem solver, use your
imagination, and have fun!**

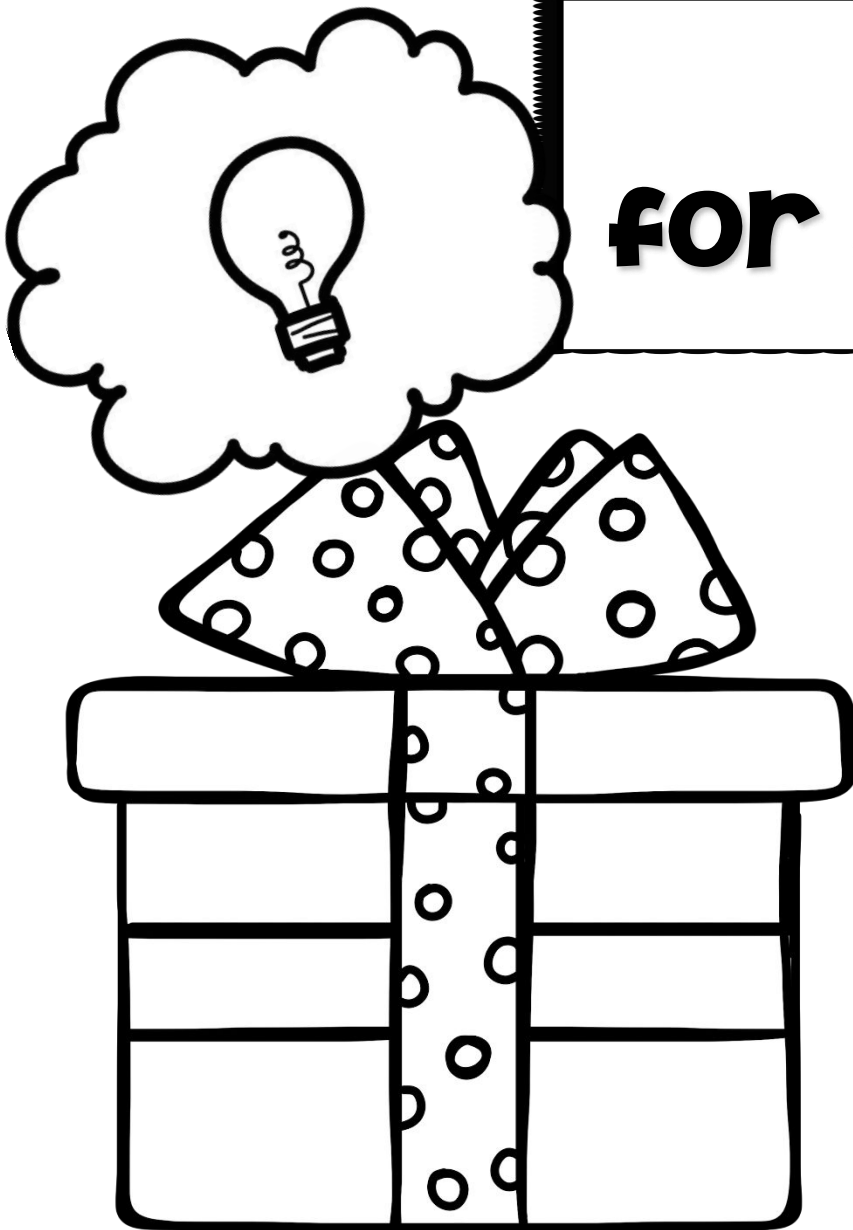
***We will display and present all STEM
family projects at school!**



STEM Family Project

Name: _____

Month of: _____ Due Date: _____



**create a Gift
for someone special.**

- *You may use any items from home in your creation.**
- *You may work alone or with a family member.**
- *Remember to think like an inventor, be a problem solver, use your imagination, and have fun!**
- *We will display and present all STEM family projects at school!**

STEM Family Project

Name: _____

Month of: _____ Due Date: _____



**create your own
Invention.**

***You may use any items from home in your creation.**

***You may work alone or with a family member.**

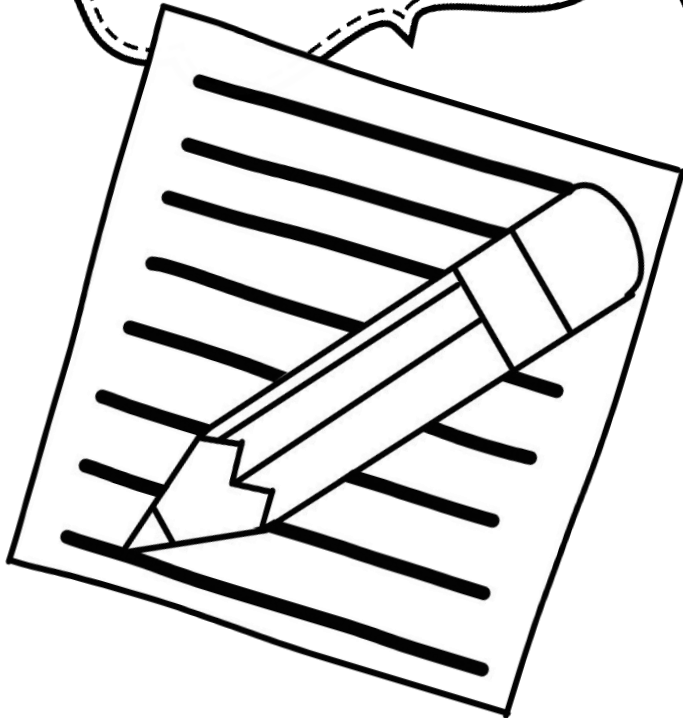
***Remember to think like an inventor, be a problem solver, use your imagination, and have fun!**

***We will display and present all STEM family projects at school!**

STEM Family Project

Optional Extensions

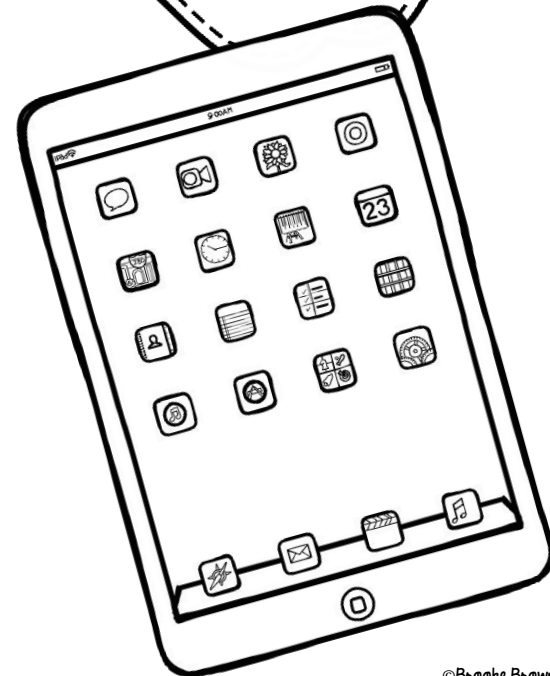
Create an instruction manual for your project.



Create a poster to advertise your project.

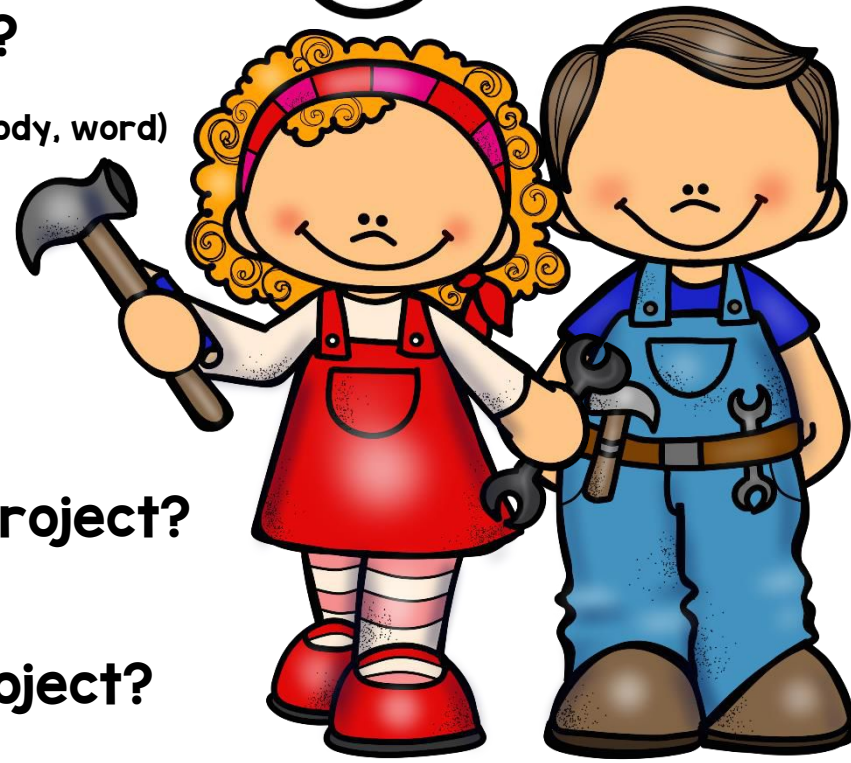
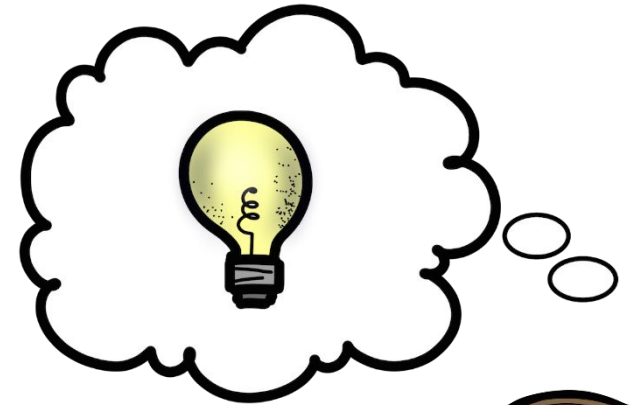


Create a video to explain your project.



STEM Family project presentation

- 1 What did you create?
- 2 What materials did you use?
- 3 Which intelligences or “smarts” did you use while designing and creating this project?
(pictures/art, nature, music, self, people, logic/math and science body, word)
- 4 How is your project useful?
What problem could it solve?
- 5 What is your favorite thing about your project?
- 6 What was most challenging about this project?



STEM Family Project Assessment Rubric

Project: _____

Date: _____

Student Name: _____

3	2	1
Student followed all instructions for project.	Student followed some instructions for project.	Student did not follow instructions for project.
Student used best effort and perseverance on project.	Student used good effort and perseverance on project.	Student showed little effort or perseverance on project.
Student completed assigned planning and reflection sheets.	Student partially completed assigned planning and reflection sheets.	Student did not complete assigned planning and reflection sheets.
Project serves a useful purpose.	Project serves somewhat of a useful purpose.	Project serves little to no purpose.
Student returned project on or before the due date.	Student returned project 1-2 days late.	Student returned project 3 or more days late.
Student used best effort during presentation.	Student used good effort during presentation.	Student used poor effort during presentation.

TOTAL POINTS: _____/18

Comments: _____

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STEM Family Project Assessment Rubric

Project: _____

Date: _____

Student Name: _____

3	2	1
Student followed all instructions for project.	Student followed some instructions for project.	Student did not follow instructions for project.
Student used best effort and perseverance on project.	Student used good effort and perseverance on project.	Student showed little effort or perseverance on project.
Student completed assigned planning and reflection sheets.	Student partially completed assigned planning and reflection sheets.	Student did not complete assigned planning and reflection sheets.
Project serves a useful purpose.	Project serves somewhat of a useful purpose.	Project serves little to no purpose.
Student returned project on or before the due date.	Student returned project 1-2 days late.	Student returned project 3 or more days late.
Student used best effort during presentation.	Student used good effort during presentation.	Student used poor effort during presentation.

TOTAL POINTS: _____/18

Comments: _____

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