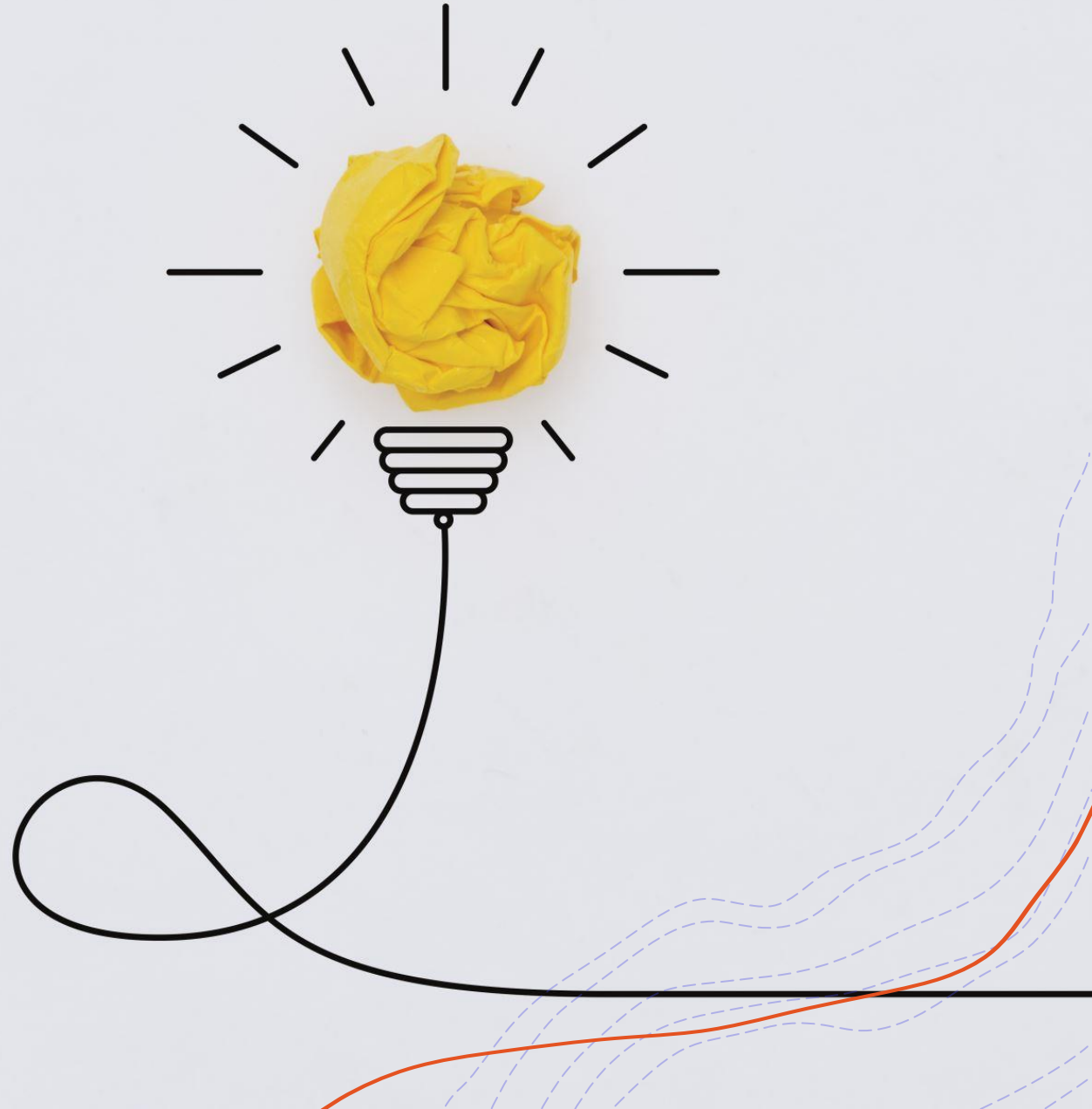


CREATING AN INVENTION BY IMPROVING ITS DESIGN

- + **Choose a simple item you use often-** for example, a pencil, chair, paperclip, toothbrush, hairbrush, spoon, cup, gloves, or key chain holder.
- + **How would you improve upon its design?** Think about how the item is used. Write your ideas, do research, draw sketches of your design, ask questions of potential users.
- + **Do not just decorate it. Think about what you can do to actually improve its function or design.**



CREATING AN INVENTION BY IMPROVING A DESIGN

- + An inventor uses STE(A)M to solve a specific problem. Talk with students about how inventions can solve problems, make items easier to use, make the item less expensive, or use less material in its construction.
- + Inventions can be things as well as ideas. The students' goal is to improve an invention. Simply decorating or using a new color on a product to make it look different does not improve it.

The Process of Inventing:

- Identify a problem that needs solving.
- Talk to others who might use the invention. What are their needs?
- Brainstorm possible solutions to the problem, keeping safety in mind.
- Make a prototype applying the Engineering Design Process.
- Don't give up on your invention. Be curious. Try other approaches.

Other Activities Students Can Do:

- + What do the students believe are important inventions?
- + Have them trace the historical development of a product they use.
- + Look up inventions that are considered the greatest. https://www.edinformatics.com/inventions_inventors/
- + How is an invention patented?
- + Learn about things that were made by mistake. Many inventions come from what feels like a mistake. Mistakes provide opportunities to learn.
- + Study famous inventors. Learn how they got their ideas.
- + Look at the Invention Timeline. <https://www.factmonster.com/math-science/inventions-discoveries/timeline-of-everyday-inventions>