



Activity: Invent Like Mattie!

Time: 40 minutes

Object: Your class will learn about a woman who was a prolific inventor and experience what it is like to create a new paper bag.

Materials: paper, glue sticks, scissors, rulers, several paper bags of different shapes (be sure to include one from a card store that is flat, along with a standard grocery bag with a square bottom), string, several large odd-shaped objects like a sweater, large ball, stapler, and any other objects that are handy

Instructions:

1. Read Mattie's biography below out loud or have your students read it to themselves.

Margaret Ethridge Knight Biography

Margaret Ethridge Knight was an American inventor who was a patent holder of 87 U.S. patents! At the very young age of only 9 years old, Margaret was a cotton mill worker. Margaret (Mattie) received her first patent at the age of 30, but inventing was always part of her life. When Mattie was a young girl, she began inventing. She made sleds and kites for her brothers while growing up in Maine. When she was just 12 years old, she had an idea for a stop-motion device that could be used in textile mills to shut down machinery, preventing workers from being injured.

A hard worker and a great role model for women, Mattie is best known for inventing a machine that folded and glued paper to form the brown paper bags familiar to shoppers as grocery bags today. The paper bags that were used before this invention were like envelopes. She had the idea to make the bottom like a box. Workmen reportedly refused her advice when first installing the equipment because they mistakenly thought, "What does a woman know about machines?" It turned out she knew a lot. Margaret founded the Eastern Paper Bag Company in 1870. She also invented other products such as a numbering machine, window frame, and several devices relating to rotary engines. Knight's original box-making machine is in the Smithsonian Museum in Washington, D.C.

2. Discuss the idea that before there were paper bags, people just wrapped things in paper and tried to tie a string around it. Demonstrate or have a student come up and try to tie up a bulky and uneven object you picked out ahead of time. Discuss how difficult this was before paper bags were invented. Then show the envelope-style bag. Tell the class that first there were bags like this that were just glued together and then at one end. It took Mattie Knight to make one with a square bottom.
3. Display different paper bags of different shapes and sizes. Pass them around and have kids pay attention to the seams and folds. If you have a large brown bag that comes apart, this would be a great demonstration as well. You can have fun with showing how much more fits into a square bottom bag.
4. Now give out paper and glue sticks and have kids work in pairs to pick an object or objects and then design, create, glue, and fold a new bag just for that object.
5. When they are done, if there is time, have them share with the class. You might want the bags to dry overnight before kids fill them. Have fun!