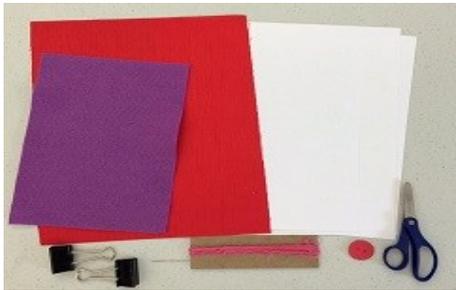


# 1. Sew a Scientific Journal

Sew your very own scientific journal to record your experiments!

## MATERIALS



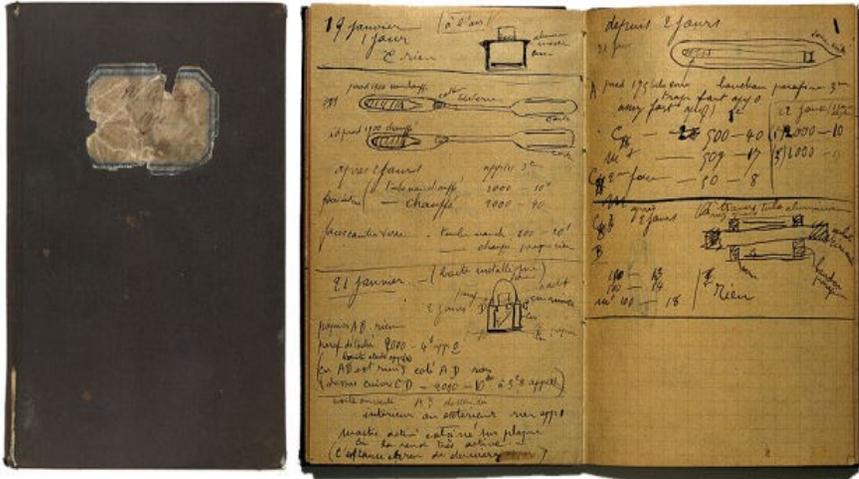
- ❖ Card Stock
- ❖ Printer Paper (5 Sheets)
- ❖ Tapestry Needle
- ❖ Thread
- ❖ Yarn
- ❖ Hammer
- ❖ Nail
- ❖ Foam Pieces
- ❖ Buttons
- ❖ Binder Clips (2)
- ❖ Felt Sheets
- ❖ Scissors

## Do the Experiment!

1. To start, you'll need five sheets of printer paper and 2 sheets of card stock. The papers are the pages of your journal and the card stock is the front and back covers.
2. Line up your card stock and printer paper. Hold them together with a binder clip on the middle top and middle bottom.
3. You'll need a hammer, nail, and foam piece for this next part. Place the edge of your journal on the foam piece. At the top of your journal, carefully hammer a nail through all the pages of the journal. Continue making holes that are not too far apart from each other, all the way down.
4. Select a needle and either a skein of thread or a length of yarn. If you know how to thread your needle and sew, begin to sew together your journal. If you don't, a teacher or counselor will show you the basics.
5. Once you have your journal sewn together, you can select some felt and buttons, and decorate the front and back covers. You can use the hammer, nails and foam if you want to create designs on your covers that you can embroider with yarn or thread. Please leave the inner pages free of decoration.
6. Have fun and be creative!

## DID YOU KNOW...

Scientific journals have been used hundreds of years. Some of the greatest journals kept were written by Leonardo DaVinci, Galileo Galilei, Sir Isaac Newton, Marie Curie, Nikola Tesla and Albert Einstein. Scientific journals are primarily used to record notes, ideas and diagrams but they can also be used to organize and connect observations made during the day. Looking back on these observations, scientists can connect the new things they are trying to understand to their daily lives. That very often leads to BIG discoveries.



**(Optional) For Young Scientists aged 4-6 years old.**

Students should take creative control of the design of their journal. Allow them to be as creative as they want in choosing colors, fabric size, cutting felt shapes, etc. Explain that fabric comes from cotton a plant, and paper comes from trees! Students can try using the needle and thread, but if they are having trouble, glue can be used to hold it together. Also if you have older kids in the group they can assist younger students when they finish their journals.

Tell students they will record their thoughts and observations in their journals like real scientists do.

## CHALLENGE

1. Can you make a different sewing pattern with your needle and thread?
2. What are scientific journals used to record?
3. Fill your scientific journal with as many of your observations as you can throughout the year!

**STEAM Challenge:** When your are done sewing your journal, count the thread loops used to create your journal. Measure each loop with a ruler. What is the estimated total length of thread you used?