



Make a Science Journal to Record Your Projects!

Scientists record their observations, predictions, and experiments in a journal. You can use any ordinary notebook as a science journal, but it's a fun project to make your own. This science journal has a pocket attached for specimens you find out in the field, notes, or secret messages.

You can use this science journal to record the projects you make from ScienceWorks Online, or to record your own experiments. You can use it to sketch ideas, make maps, write lists, try secret codes, or doodle science cartoons. You'll be following in the footsteps of scientists like Leonardo DaVinci and Marie Curie.

There are lots of different ways you can make a science journal-- if you think of a way that improves on this idea, try it out! Maybe you will want a journal that you can easily open up to add more paper to. Maybe you will want a journal with a cover that can light up, for after-dark investigations. Design your journal, try out ways to make it work, and see what happens.

When you finish your journal, take a picture or video and share it with us at online@scienceworksmuseum.org, or have a parent or guardian post it on social media with the hashtag #scienceworksonline. We love to see your ideas at work, and can share them so other engineers can see what you did.

Difficulty Level: Easy for ages 10-14; ages 4-9 may need help

Objective: Make a science journal for your field notes and specimen collecting

Materials

- 15 sheets of paper - We used printer paper
- 5 sheets of gridded paper
- 1 sheet of construction paper or an envelope
- Hot glue gun
- 1 glue stick (Use masking tape if you don't want to/can't use hot glue)
- About 2 feet of Ribbon, string, or embroidery floss
- 2 pieces of thin cardboard -- cereal boxes work well for this
- A hole punch (or a nail and hammer)
- A foam block if you are using a nail and hammer
- A ruler
- A needle- one with a large eye works best
- A pencil
- A metal brad
- A long rubber band
- Anything you want to decorate the outside of your journal

(If you only have a short rubber band, use two brads, one for the front cover and one for the back. Or use string, or a different material you have)

Procedure

1. Get two thin pieces of cardboard and cut them to measure about 5 inches long by 4 inches wide. A cereal box works really well. If you don't have any cardboard, you can fold a piece of cardstock in half. This will be the cover of your journal.
2. Put the two cardboard pieces on top of each other, and mark 4 dots on the top piece, about 2 inches apart. Make holes through these dots with the hole punch or nail.
3. Put the paper in between the cardboard pieces, on top of a foam block or other safe material to hammer on. Take a nail and hammer it lightly through each hole in the cardboard, making sure it goes through the paper as well. Once you finish, you may need to turn everything over and hammer the nail through the holes in the opposite direction.

Quicker method/If you can't hammer: Line up the paper with the cardboard covers, and use the hole punch to make holes in it.

4. Measure your string, embroidery floss, or ribbon from your thumb to your shoulder, then turn it over and measure it back down to your thumb again. You should have about 24 inches of string to use to bind your journal.
5. Thread your needle so that the thread hangs down evenly on either side, then tie a double knot in the thread. You will use this thread to bind your journal.
6. Lace the thread through the first hole in the front cover, pushing it through the holes in the paper and the matching hole in the back cover. You will do this for every hole in the journal, alternating sides of the journal as you pull the thread through.
7. Cut the thread free of the needle, and tie it in a double knot.
8. Open the journal and spread the pages flat. Use a craft stick or ruler to flatten the pages by pushing it carefully down the book at the spine. You may have to do this at different parts of the journal.
9. Now you can add a pocket to your journal, to carry specimens you find in the field, pencils, a small magnifier, or other tools.
Turn to the back of your journal and lay down a thin line of hot glue on the inside of the cardboard cover. You will make 2 vertical glue lines and one horizontal line, sort of like a box that has two sides and a bottom, but no top. Press a sheet of construction paper or a large envelope onto the hot glue, and reinforce the outside with masking tape.
10. You may want to have a way to keep your journal shut when you're not using it. You can make a latch for your journal by making a small hole in the front cover and pushing a metal brad through, with the tabs facing out. Stretch a rubber band or string around your journal, and hook it over the metal tabs. You can gently fold the tabs down to make a hook, and fasten the rubber band over it.

11. Decorate the covers of your journal however you like! You might want to collect interesting leaves and make a pattern with them, then cover them with contact paper. Or you might want to draw interesting patterns or illustrations, or cover it with felt, or googly eyes! There isn't a right way or wrong way to decorate your journal.

Your science journal is small enough that you can take it with you when you are hiking, exploring, doing other field investigations, or doing experiments at home. When you do an observation or investigation, use it to record your predictions and your ideas. When you are doing an engineering project, you can write down what ideas worked and what didn't, so if you want to make improvements later, you can remember what you tried.

Bookbinding Resources

This science journal is a very simple way of making a book. Before Johannes Gutenberg invented the printing press in the 1500s, each book was an individually-made work of art. Books were very rare and expensive then, and might cost as much as a car does today.

Being a bookbinder was a job that people had in the middle ages. It involved a lot of making skills like measuring, estimating, designing and iterating, and a little bit of chemistry, to make paper and glue. There are lots of different techniques to make books, different ways to stitch the binding, and different ways to decorate your book when you finish.

If you are curious about other ways to make books, here are some resources you might like:

People used to make beautiful illustrations in their books, called illuminations. You can learn more here:

<https://www.khanacademy.org/humanities/medieval-world/medieval-book/making-medieval-book/v/making-manuscripts>

These books have more ideas for bookmaking projects:

Making Books With Kids by Esther K.Smith

ASIN: B01AWIE7AI

Make it! Read it! Write it! by Wendy M.L.Libby

ISBN-10: 9781613730300

ISBN-13: 978-1613730300

Take a picture of you using your science journal, and share it with us, so we can see what you made! For more engineering projects and science activities, [subscribe to our newsletter](#)! Have an adult send it to online@scienceworksmuseum.org or share it using the hashtag [#ScienceWorksOnline](#)