

THE ART OF MATHEMATICS: MAKE A FLAKE

Students will love this hands-on, fun math activity where they design a snowflake using geometric shapes. They will then use their knowledge of shape attributes to observe, describe, and collect data on their snowflakes as well as their classmates' snowflakes!

Kansas College and Career Ready Standards for Visual Art:

VA:Cr2.3.K Create art that represents natural and constructed environments.

VA:Re 8.1.K Interpret art by identifying subject matter and describing relevant details.

Kansas College and Career Ready Standards for Math:

K.G.A.1 Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to.

.K.G.A.2 Correctly name shapes regardless of their orientations or overall size.

K.G.B.4 Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length).

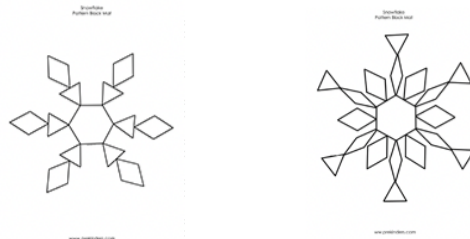
Classroom teacher will need to supply:

- Blue (either dark or light) 12" X 12" square **OR** blue 12" circle
- One large white hexagon per student (cut out)
- One shape count label per student
- Glue (one per student)
- White pattern blocks (cut out)

We will learn about snowflakes, review the names of the shapes and discuss symmetry.

Students will then begin creating their snowflakes. I would suggest giving student groups a variety of shapes and allowing them to choose the ones they would like to incorporate into their designs.

Students will be choosing a variety of shapes to use to create their snowflakes. You may need to have a few sets of pattern blocks cut out depending on the size of your class.



Program Connection Information

Please use an external microphone (conference style) rather than the integrated one in the computer for the audio for your class and locate it centrally in the room. It can be difficult for the Greenbush teacher to hear the students using the computer microphone and therefore it reduces the interactive nature of the lesson. It is fine to use the computer webcam for your video source.

All classes will take place using Zoom desktop video. If your building is already set up to use a desktop video application with a computer, simply open a browser and enter <https://zoom.us/j/3662120241> in the URL space. You may need to download Zoom launcher software (free download) if you don't already have it. This needs to be done in advance of the lesson.

If using a Polycom video conferencing unit (or any legacy type video conferencing unit) to connect to a ZOOM conference, make sure the unit is in "encrypted mode" then dial the following IP on the internet: 162.255.37.11 or 162.255.36.11 and once connected, they will ask for a MEETING ID: enter 3662120241 (for Sharon at Science Center).

It's always a good idea to touch base with your district technology facilitator prior to your program to make sure all systems/equipment are in place and operational and that there aren't any firewalls in place that might prevent you from connecting to Zoom.

Once you connect, you will enter a Zoom waiting room. Your Greenbush teacher will admit you into the final meeting room.

If you have questions, please call Sharon Bertolio at Greenbush, 620-724-6281, or email at sharon.bertolio@greenbush.org (best method of contact).

_____ 'S SNOWFLAKE

I used...

_____ hexagons _____ squares
_____ trapezoids _____ triangles
_____ rhombuses

to make my snowflake.

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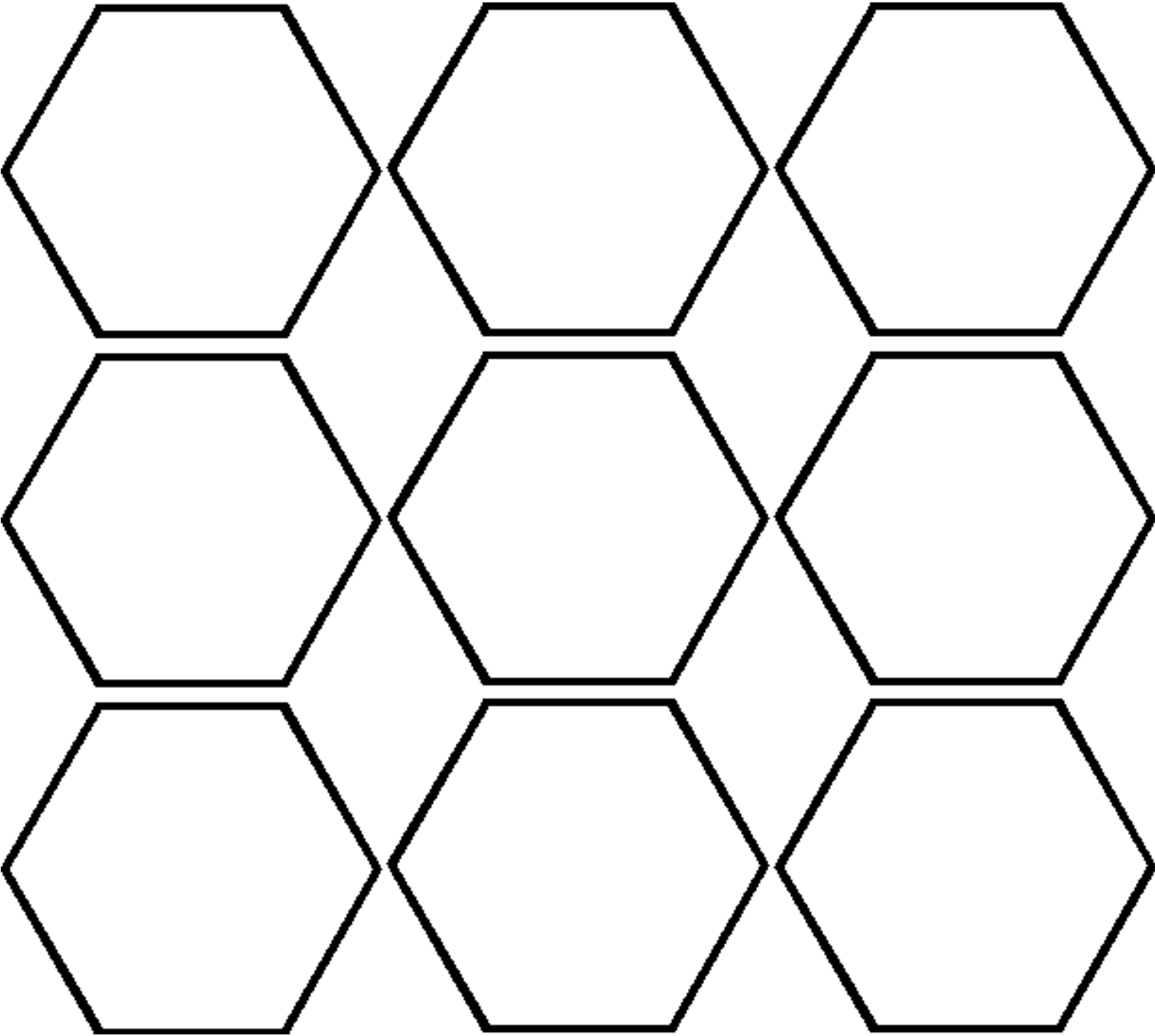
_____ 'S SNOWFLAKE

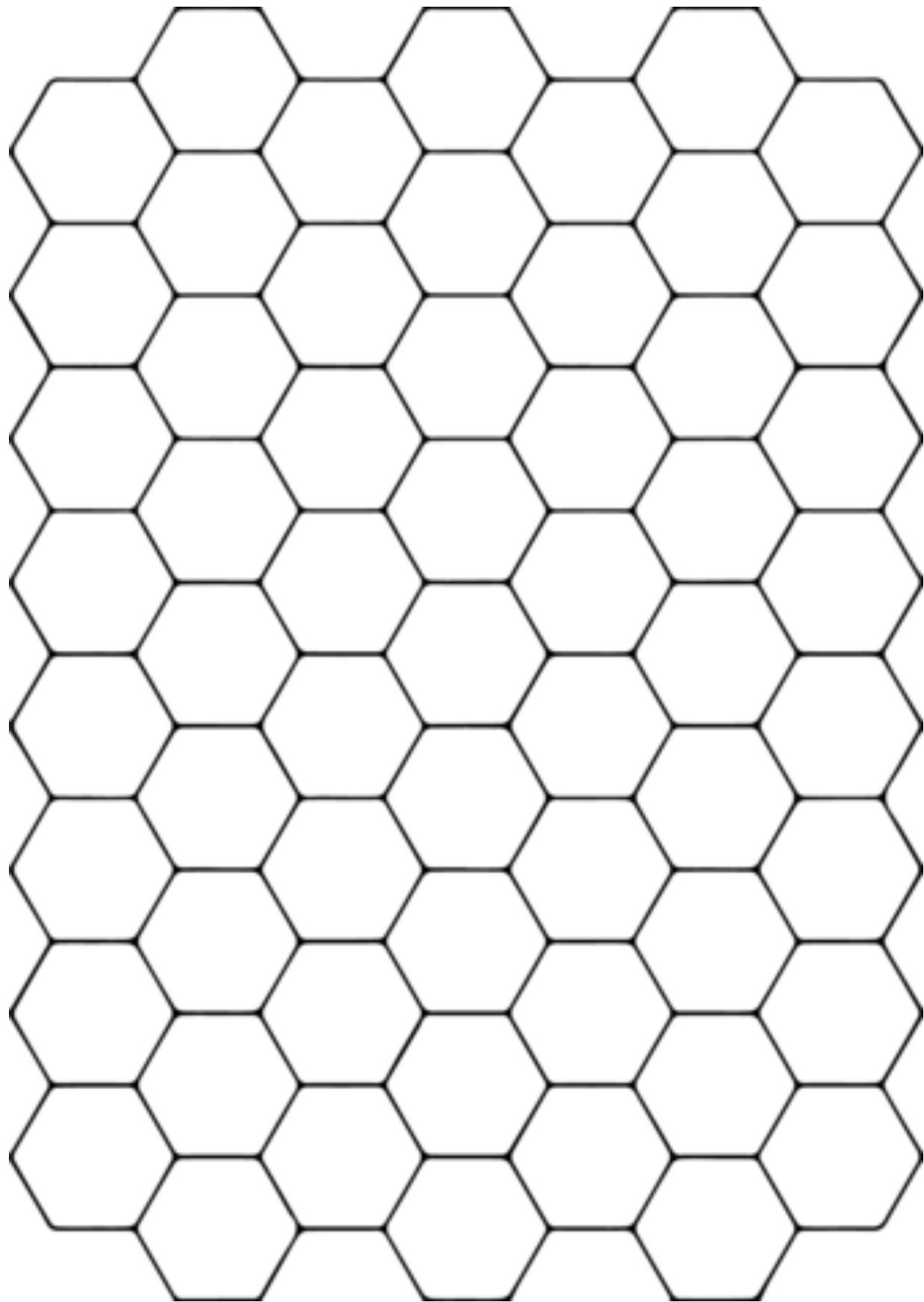
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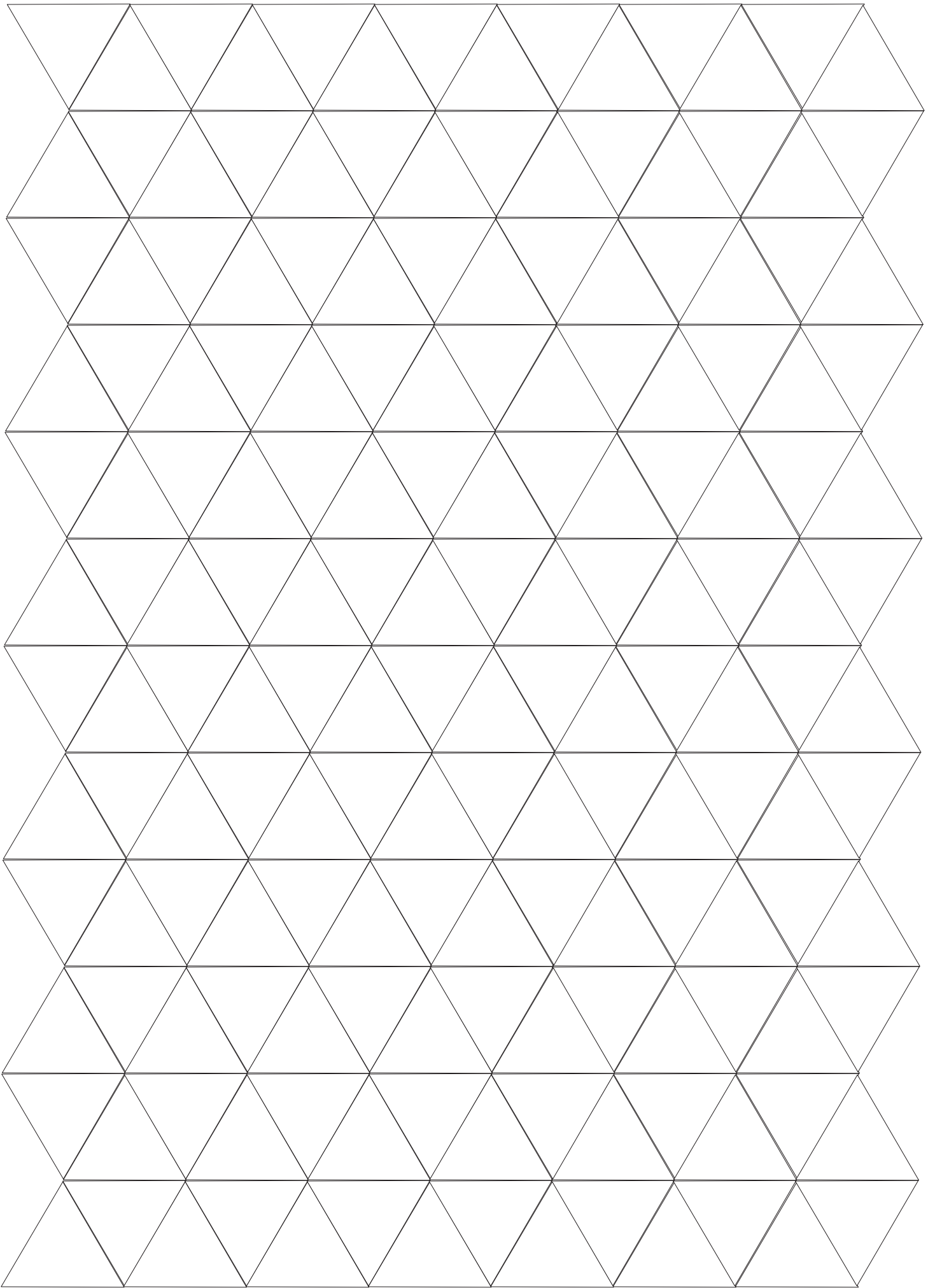
Hexagons – one per student (cut out)

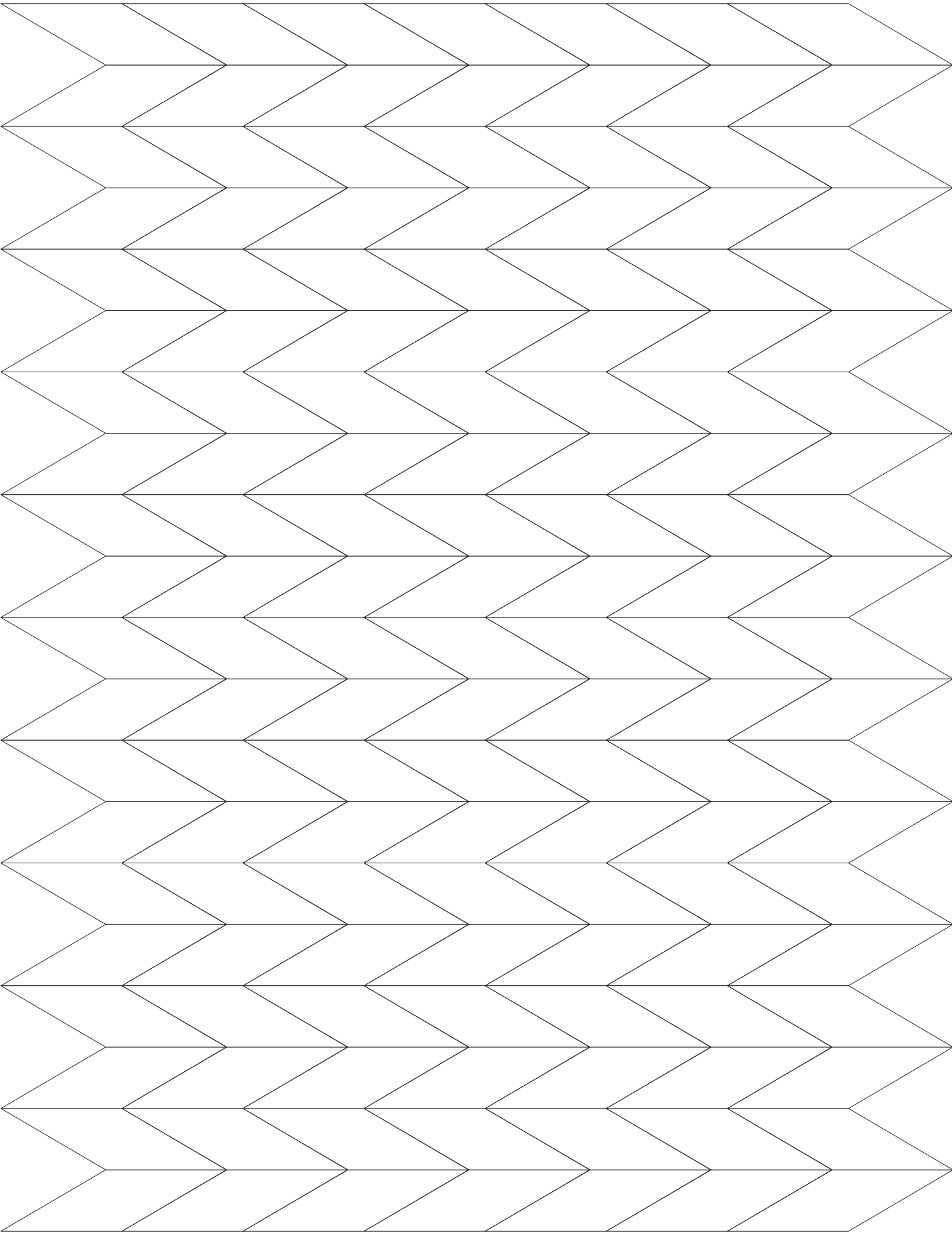












Additional Lesson Resources

Pre-visit Activity

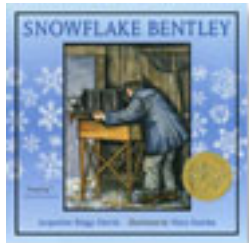
Read one of the following books (or other snow related fiction or non-fiction book) to the students.



Snow

By: Uri Shulevitz

No one except a small boy thinks the few falling snowflakes will amount to much. As the snow continues to fall, however, the dull, gray town becomes transformed into a winter wonderland, and all of its residents come out to enjoy. The wonder of it all is captured through dynamic illustrations and understated text.

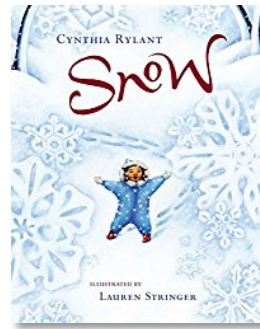


Snowflake Bentley

By: Jacqueline Martin

Illustrated by: Mary Azarian

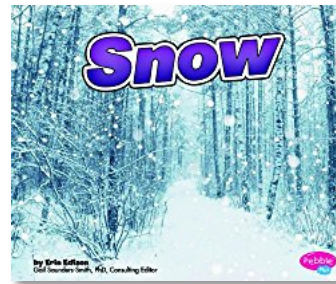
The story of one boy's passion for snowflakes led to a lifetime's study. Wilson Bentley, better known as Snowflake Bentley, is presented in a fascinating picture book biography. Read just the story portion or include the factual narration which is included on each page. Illustrations evoke Snowflake's Vermont, just the thing for a warm day.



Snow

By: Cynthia Rylant

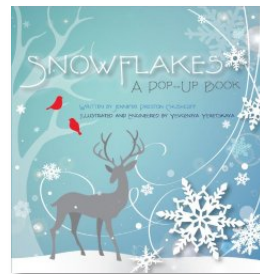
Snow is a beautiful book that features dream like illustrations. The author explains different types of snow and shows all the happy emotions that can come with snow.



Snow

By: Erin Edison

Snow is a great book for little learners who are curious about snow. The book includes information about how snow is made, blizzards, avalanches, types of snow and melted snow. This book is available in English and in a split English/Spanish version.



Snowflakes: A Pop-Up Book

By: Jennifer Preston Chushoff

Snowflakes is a pop-up book perfect for snow lovers. Each page features paper snowflakes that seem to come to life. The book also includes information about snowflakes.