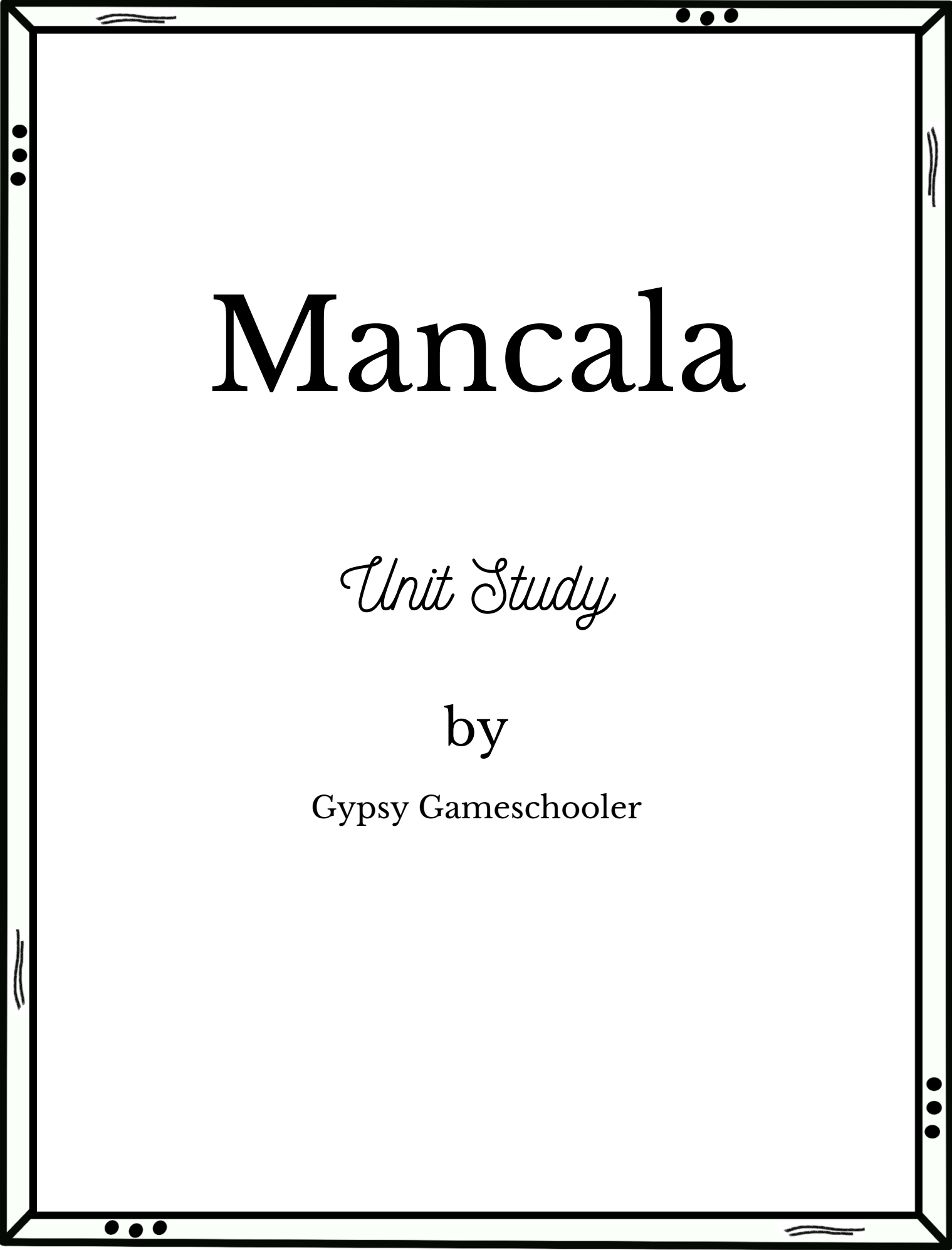




Mancala

Unit Study

by

Gypsy Gameschooler

How To Use This Unit Study

This unit study is designed as a fun learning interlude for the whole family. If you find yourself overwhelmed during the year and want a fun break during which your kids are still learning, this might be perfect for you. Or maybe you're looking for a way to explore the many cultures of Africa while having fun.

If you want to keep learning but want more fun, relaxation, and time for other fun activities, then this unit study is for you! Read the lessons on days when you have more time or energy for something formal. If you have time but want something fun, pull out one of the science experiments. There are coloring sheets your kids can do on their own. And finally, the games make great family time.

You might not get through everything—that's okay! It just means you'll have more you can use later.

Happy learning!

Thank you for respecting the hard work I put into this unit study and not sharing it with others. Feel free to print as many copies of this for your own use as you'd like.

For more resources and freebies, make sure you check out [my shop](#).

Check out my book, [Gameschooling on a Budget](#), for tips and games to play for less.

[Gypsy Gameschooler](#) has been a labor of love for me, but website hosting gets expensive. I would really appreciate it if you were to click one of my Amazon Affiliate links before doing your shopping on Amazon.

Amazon Affiliate links don't cost you anything, but Amazon pays me a small commission. The cookies are only good for 24 hours, but I get credit no matter what you purchase.

I'm an affiliate for a few other programs. Every penny helps! One day, I hope to help support my family with my blog, so thank you!

If you want to share this printable with someone else—thank you! Please just send them to [my website](#) so they can purchase it for themselves.

Thanks again!

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Likely Origins of Mancala



History of Mancala and Eastern Africa

Eastern Africa, a land of vibrant cultures and ancient traditions, has a rich history deeply intertwined with the game of Mancala. Let's travel back in time and explore how this fascinating game emerged and evolved alongside the civilizations of this region.

Early Societies and the Seeds of Mancala (3,000 BC - 100 AD):

Imagine hunter-gatherers roaming the savannas of eastern Africa, thousands of years ago. Archaeologists believe they might have been the first to play Mancala, using pits dug in the ground and stones or seeds as counters. This early version, like many traditional Mancala games today, likely served as a way to socialize, teach strategy, and pass down knowledge.

The Rise of Kingdoms and the Spread of Mancala (100 AD - 1500 AD):

As civilizations like Aksum in Ethiopia and Kush in Sudan flourished, Mancala evolved alongside them. Trade routes carried the game's rules and variations across the continent, creating a diverse tapestry of Mancala traditions.

Mancala's Journey Beyond Borders (1500 AD - Present):

With the arrival of European colonizers, Mancala's journey continued. Enslaved Africans brought the game to the Americas and the Caribbean, where it adapted to new cultures and received new names like "Wari" or "Warri." Today, Mancala is enjoyed worldwide, from international tournaments to family game nights, serving as a bridge between cultures and a reminder of its rich African heritage.

Beyond the Game: Mancala's Cultural Significance:

Mancala is more than just a game; it's a cultural touchstone. In some cultures, it's used for divination or settling disputes. Mancala also serves as a powerful tool for storytelling, with each move and capture representing moments in life's journey.

So, the next time you play Mancala, remember:

- You're connecting with a tradition that stretches back thousands of years.
- You're experiencing a game that has traveled continents and cultures.
- You're engaging in a cultural activity that holds deep meaning for many communities.

I hope this summary has sparked your curiosity about Eastern Africa and Mancala. If you'd like to delve deeper, check out these websites:

[History of African Fashion](#) • [The Met](#) • [Wikipedia](#) • [University of Maine](#) • [Savannah African Art Museum](#) • [Loyal Nana](#) • [Sciendo](#) • [The Universities at Shady Grove](#) • [The Spruce Crafts](#) • [Mancala Games](#) • [AramcoWorld](#) • [Khan Academy](#)

Book Recommendations

Title	Author	Pages	Pictures?	Genre
A History of the East African Coast	Charles Cornelius	107	no	nonfiction
A History of East and Central Africa to the Late Nineteenth Century	Basil Davidson	338	no	nonfiction
Out of Africa	Isak Dinesen	416	no	nonfiction
The Black Man's North and East Africa	Yosef ben-Jochannan & George Simmonds	96	no	nonfiction
East Africa: An Introductory History	Robert M Maxon	320	no	nonfiction
Africa, Amazing Africa	Atinuke	75	color	nonfiction
Africa is Not a Country	Margy Knight	39	color	nonfiction
The History and Government of Southwest Asia and North Africa	Amanda Vink	48	some color	nonfiction
Our Story Starts in Africa	Jesse Foster	unpaged	color	nonfiction
Ancient Africa: A Global History, to 300 CE	Christopher Ehret	210	yes	nonfiction
Serengeti Spy: Views from a Hidden Camera on the Plains of East Africa	Anup Shah	204	color	nonfiction
Kings and Queens of East Africa	Sylviane Diouf	63	some color	nonfiction
The Masai of East Africa	Lisa McQuail	48	color	nonfiction
Life and Culture in Southwest Asia and North Africa	Miriam Coleman	48	color	nonfiction
Listening for Lions	Gloria Whelan	194	no	historical fiction
Early Islamic Civilization	Izzi Howell	32	color	nonfiction
Travel to Kenya	Matt Doeden	32	color	nonfiction
Stuart's Field Guide to National Parks & Game Reserves of East Africa	Chris Stuart	248	color	nonfiction
The Golden Rhinoceros: Histories of the African Middle Ages	Francoise-Xavier Fauvelle	264	color plates	nonfiction
The Rough Guide to World Music: Africa and Middle East		656	yes	nonfiction

Documentary Recommendations

Title	Publisher	Year Produced	Length
Turning Points in Middle Eastern History	The Great Courses	2016	18 hrs
The Middle Ages Around the World	The Great Courses	2022	12.3 hrs
Ancient Roads: From Christ to Constantine	PBS	2015	6 hrs
Africa: The Serengeti	Dreamscape Media	2008	40 mins
Africa's Wild Side	National Geographic	2019	135 mins
Giraffes: Africa's Gentle Giants	PBS	2016	60 mins
East Africa	Worlds Together	2012	25 mins
East Africa Safari	Rick Ray	2011	85 mins
Natural Wonders of East Africa	Natural Wonders of the World	2005	50 mins
East Africa for Kids	Worlds Together	2010	34 mins

Project Ideas

- Design your own simple game using items you have around your house. What are the rules? Is it cooperative or competitive? What's the win condition? What materials do you need?
- Plan your family's visit to Eastern Africa. What countries and cities will you visit? What time of year will you go? What will the climate be like? What vaccinations do you need? What documents will you need? What animals will you be likely to see? What activities do you have planned? Where will you stay? What will your budget look like? What food will you get to try? Use the [writing pages](#) at the end of the unit study.

Mancala

How to Play Mancala: Watch the video with background music or without background music

We use instructions from Endless Games.

How to Make Your Own Mancala Game: Watch the video

Materials

- 1 1-dozen cardboard egg carton
- 48 small stones or toys, large beads or seeds, etc

Process

1. Cut the lid off your egg carton and set the bottom aside.
2. Cut your lid in half, so each half can become your “store.”
3. Staple or tape the parts together.

Decorating Your Mancala Game

East African designs are much more complex than I can reproduce, but here's my best effort:



Here are some websites to explore different patterns and designs:

Britanica • umil • Contemporary African Art • All About African Art • Rocking Afrocentric • World History Encyclopedia

Game Recommendations

Mancala is a game of logic and reasoning. If this is enjoyable to you, there are many other logic games you can try out:

- Single-player games
- Two-player games
- Cooperative games
- Escape Room Games

In addition, you might enjoy my unit study on logic and logical arguments to further your explorations. Use code **LOGIC50** to get half off the Logic Unit Study!

To get you started, check out my Logical Argument Mini Scavenger Hunt!

Math Problems

1. There are 6 pockets on each side. How many pockets in total? _____
2. To start the game, 4 stones go in each pocket. How many stones do you need in total? _____
3. Is it possible to tie? _____ How many stones would you each have if you tied? _____
4. How many stones do you need in order to win? _____
5. While playing, count the stones in your pockets and plan out where they will go for a more successful, strategic game.
6. At the end of the game, practice counting your stones by 2s, 3s, 4s, and 5s. Which is easier? _____

Science Experiments

There are three important parts of any science experiment. Controlling variables, multiple trials, and recording results.

A variable is anything that can be different. Temperature, pressure, humidity, sun or light, the presence of different bacteria, viruses, or fungi, sound, moisture, and mineral and nutrient content are all different variables that could impact an experiment. Some variables are difficult for most people to control for (I don't know about you, but I don't have an environment in which I can control temperature, pressure, or humidity).

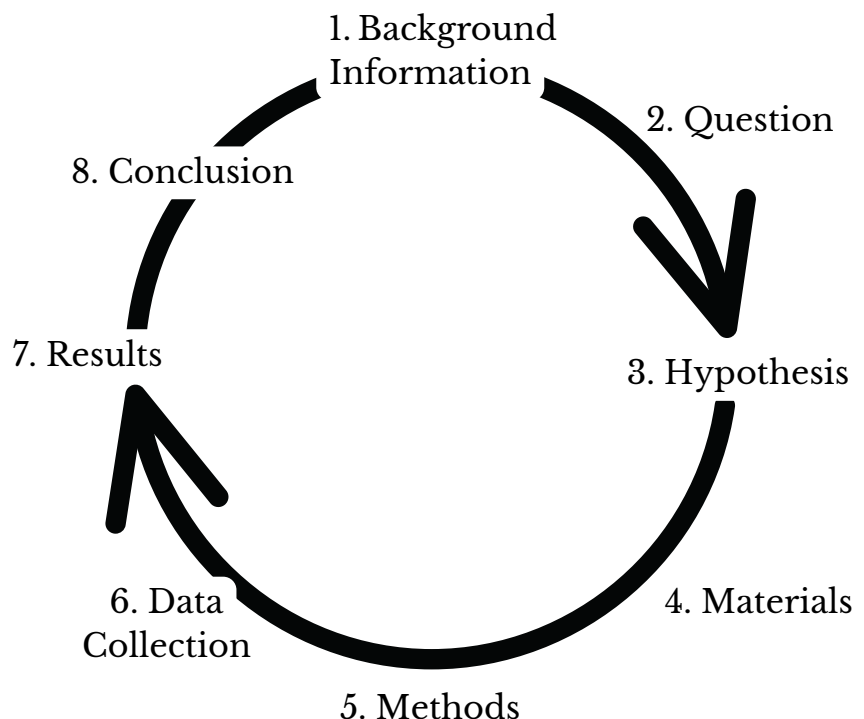
As you conduct your experiments, make sure as many variables as possible are kept constant, except for one. The variable you are changing is what you are testing.

This is where multiple trials come in. They can help to mitigate variations in your environment and human error. One way to have multiple trials is to have a larger sample size. A big experiment conducted by a scientist in a lab might have several thousand samples. That's beyond the scope of what we can do, but we can have at least a few samples.

Finally, recording your results makes it so you can share the information with others and they can reproduce your work (which adds to the multiple trials aspect).

Use the following pages to help you record your experiment, processes, data, and results. You can use extra sheets if needed.

The Scientific Method is a process that repeats over and over again, with the conclusion of one experiment leading to the background information of the next experiment.



Seed Germination/Growth Rates

There are some correlations between the development of Mancala and agriculture in Africa, with some arguing that it's a planting game. If you use bigger seeds instead of stones, this makes some sense. Some of the earliest crops of Africa were sorghum, millet, and a type of banana. These seeds might not be available where you are, although millet is readily available in pet stores. However, millet is a rather small seed and ill-suited to the game of Mancala.

Materials

- Soil
- Containers
- Water
- Different types of seeds, ideally found in Eastern Africa (beans, lentils, peanuts)

Experiment

1. Conduct background research on the plants you have seeds for. Make a note of temperature, water, soil, and light requirements.
2. What variable do you want to test? You could test plant species, water amount or schedule, light levels, temperature, or soil. Can you think of any other variables?
3. Fill your pots with soil. Ideally, you would have 5-10 pots for each type of seed. Pot type and soil are both potential variables, so make sure you use (and record) the same type of pot and soil.
4. Plant your seeds. Typical seed-planting depth is 2 to 3 times the diameter of the seed, but research what each seed requires.
5. Water with a measured amount of water. As long as your pots have drainage, you should be okay to water 1 cup at first, to thoroughly wet the soil. However, don't just pour a cup of water in each pot. If you don't have a watering can, you can create one by poking holes in the bottom of a plastic container. Pour your cup of water into your "watering can" while it's over a pot to make it "rain" on the seed. Use the same watering can your entire experiment to eliminate it as a variable.
6. Continue watering throughout your experiment. Depending on your local humidity and temperature, you might need to water daily or only every few days. When the top of half of the pots are dry, water them all again. Record how often you water them.
7. Record how long it takes each seed to germinate, and how many don't germinate.
8. You can extend the experiment to also record growth rates.

Fabric Dyeing with Natural Materials

As you explore the patterns and designs present in Eastern Africa, note the many colors. All of these colors were originally obtained naturally, through plants, minerals, or invertebrates. However, each of the different natural dyes require a mordant, not always the same one. Look up what mordant(s) you will need for the dyes you choose. Experiment with different colors you can get using natural materials.

Fabric material (cotton, wool, silk, etc), fabric color, water temperature, amount of dyeing material, and mordants can be different variables.

Generally, everything (fabric, dye material, mordant) is weighed dry for dyeing. With most dye materials, you will need 50% the weight of your fabric. So if you want to dye an ounce of (dry) fabric, you will need half an ounce of (dry) dye material.

Alum is a good mordant for most fabrics and should be used at 15% weight of fabric. Maiwa has an excellent, in-depth guide to dyeing with natural materials.

Materials:

- White fabric scraps, all the same material
- Pots
- Gloves - wear any time you will be handling dyes or mordant
- Natural dyes like turmeric, beetroot, onion skins, avocado pits, etc.
- Mordant (alum)

Experiment:

1. Do some research about your chosen dyes. Record how much material you will need and what mordant you will need.
2. Soak your fabric scraps in their required mordant, if they need pre-soaking. Record how much mordant, water, and fabric you use, as well as how long you soak it for.
3. Add your dyeing material to your pots. You might also try different versions of the same dyeing material by varying the amount of material in each pot (for example, one cup of onion skins, 4 cups, and 8 cups).
4. Fill your pots with water. Usually, filling with cold water and then heating is the recommended method, but do your research and record what you do.
5. Soak your fabrics with the mordant and dye for the recommended amount of time at the recommended temperature. Record what you do.
6. Carefully remove your fabrics and rinse them out, then hang to dry.
7. Record the colors you observe in each pot, when the fabric is removed, after it is rinsed, and after it dries.

Science Experiments

Background Information: Use this space to record prior knowledge or research you have done. Scientists never work in a vacuum; they're always building on the work of others. So, your background knowledge can be information you have learned previously, a study someone else has already conducted, or information you look up so you can design a better experiment.

Question: What do you want to test? Science is not able to disprove something, only support or not support. So, make sure you're trying to test something positive, ideally with a yes/no type of question. ("Does temperature impact the melting rate of ice?") Asking "how" is often beyond the scope of one experiment, particularly that we can do at home.

Hypothesis: This is what you think is the answer to your question. It's not a random guess; it's backed up by the background information you have already collected. ("I think that an increase in temperature will lead to an increase in melting rate of ice because temperature is a measurement of molecule movement. As molecules move faster, the temperature increased. Faster molecules should melt faster.") Again, your experiment can either support this hypothesis or not support it.

Materials: This should be a precise list of everything you used. Amounts (mass is often more accurate than volume), brands, types, etc. The more precise you can be, the more likely someone else will be able to replicate your experiment.

Methods: Again, be as precise as possible. Have you seen the peanut butter sandwich videos? If your instructions are not precise, then no one can reproduce your experiment and verify your results.

Data Collection: I included a couple of spreadsheets for you to use, but you can record data in other ways. Make sure you include units (if applicable)!

Results: This should be a summary of what you found out with your experiment. Sometimes a graph is a better way to display results, or you might want to include a graph with an explanation. However, it's just facts, no interpretation.

Conclusion: How does your whole experiment relate to the bigger world? Do your results support your hypothesis? This is where the analysis and interpretation goes.

Experiment Title: _____

Background Information: _____

Question: _____

Hypothesis: _____

Materials (specifics): _____

Methods (specifics): _____

Data Collection (print as many pages as you need so you can take notes for all your samples):

Seed (species and number):						
Day	Amount watered	Height				

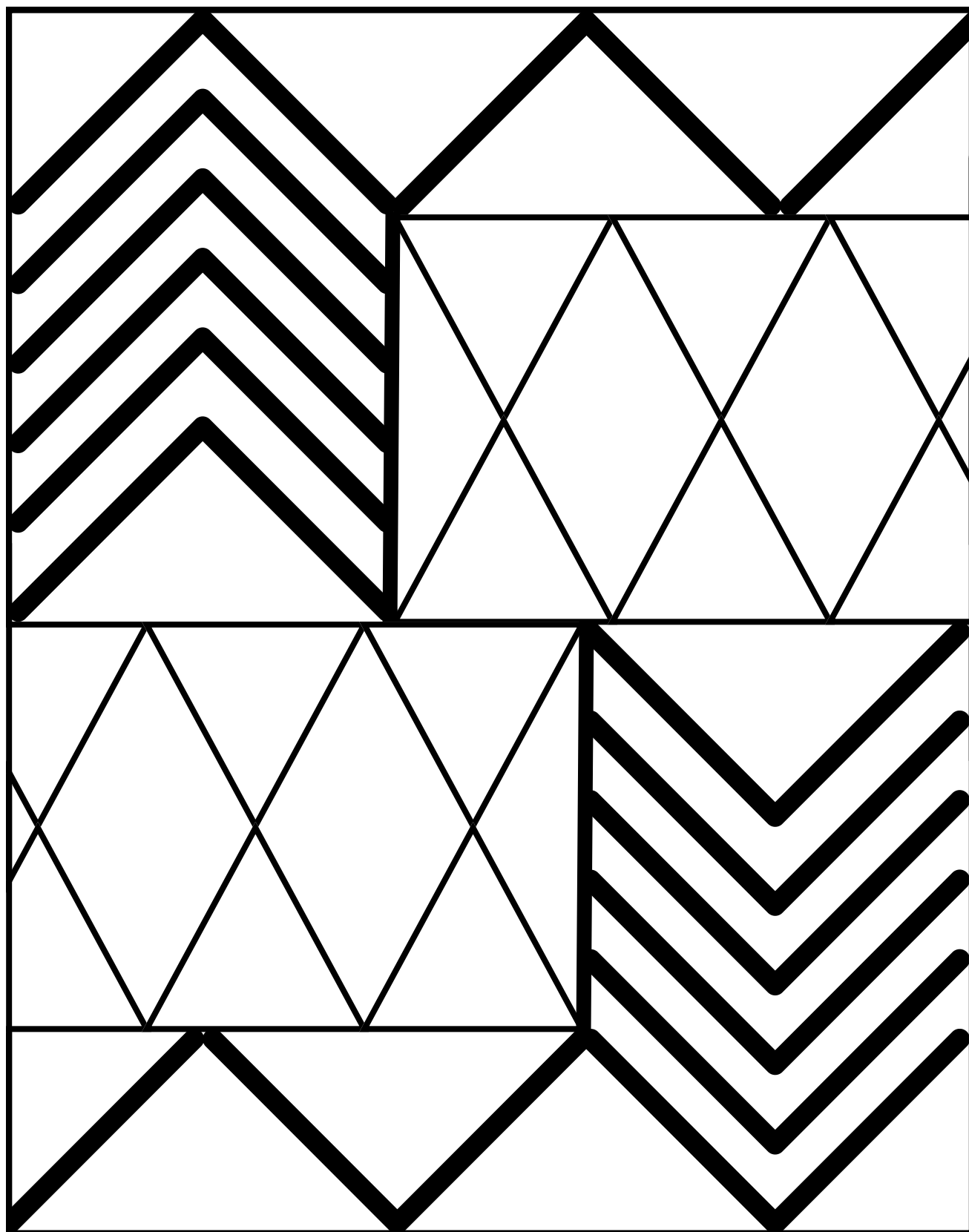
			Colors			
Fabric	Dye	Mordant	In Pot	Out of Pot	Rinsed	Dry

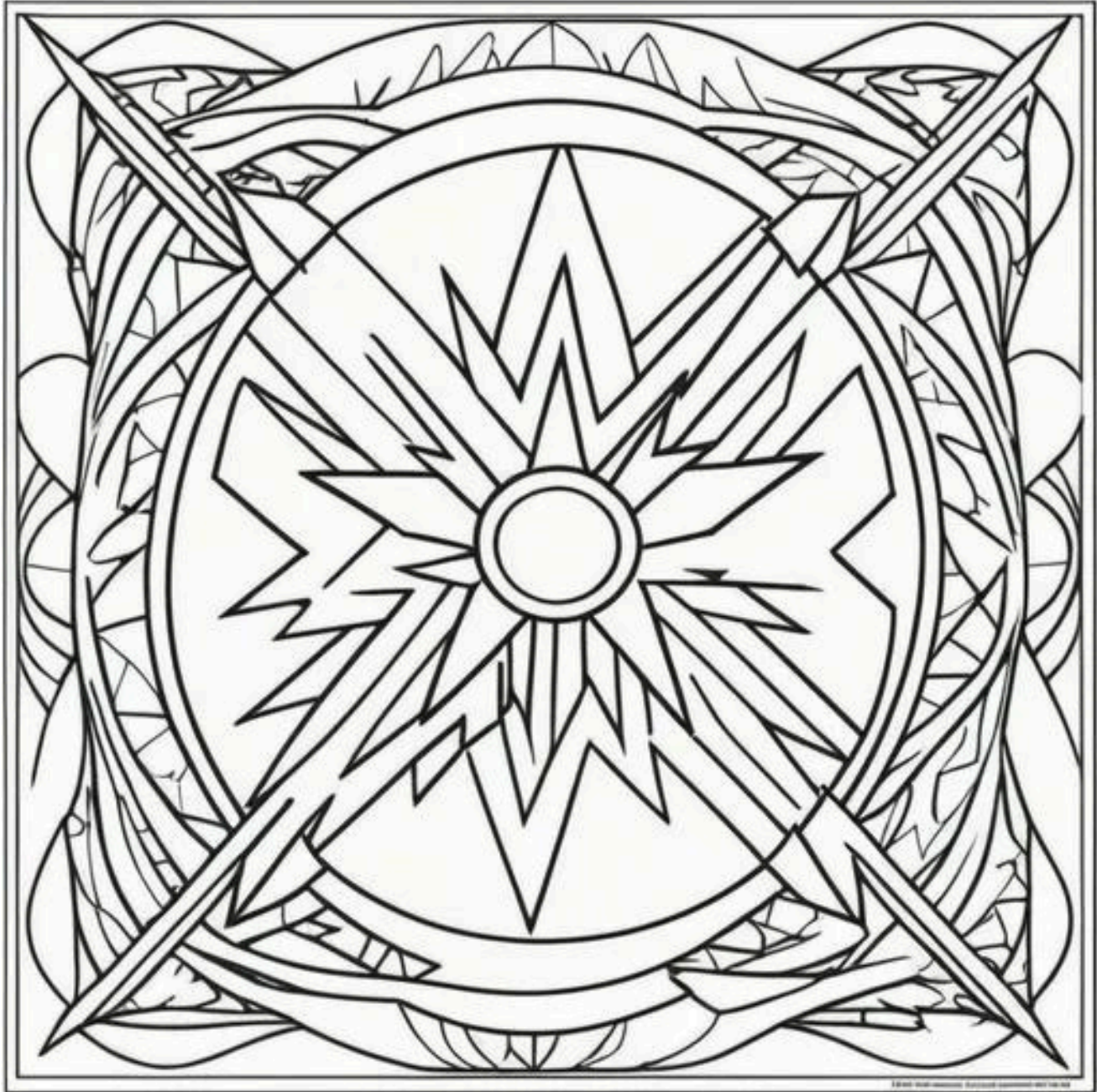
Results: _____

Conclusion: _____

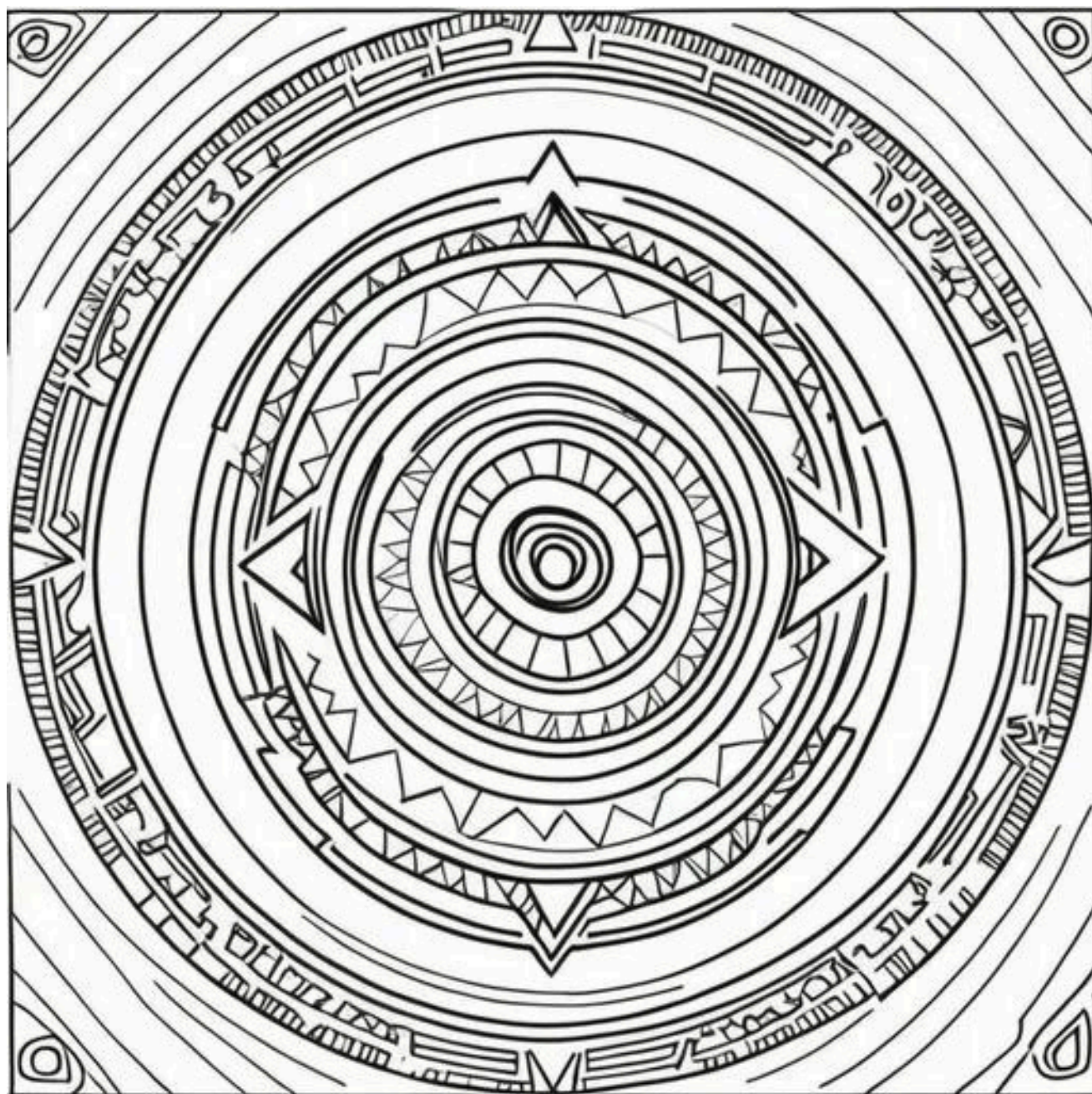
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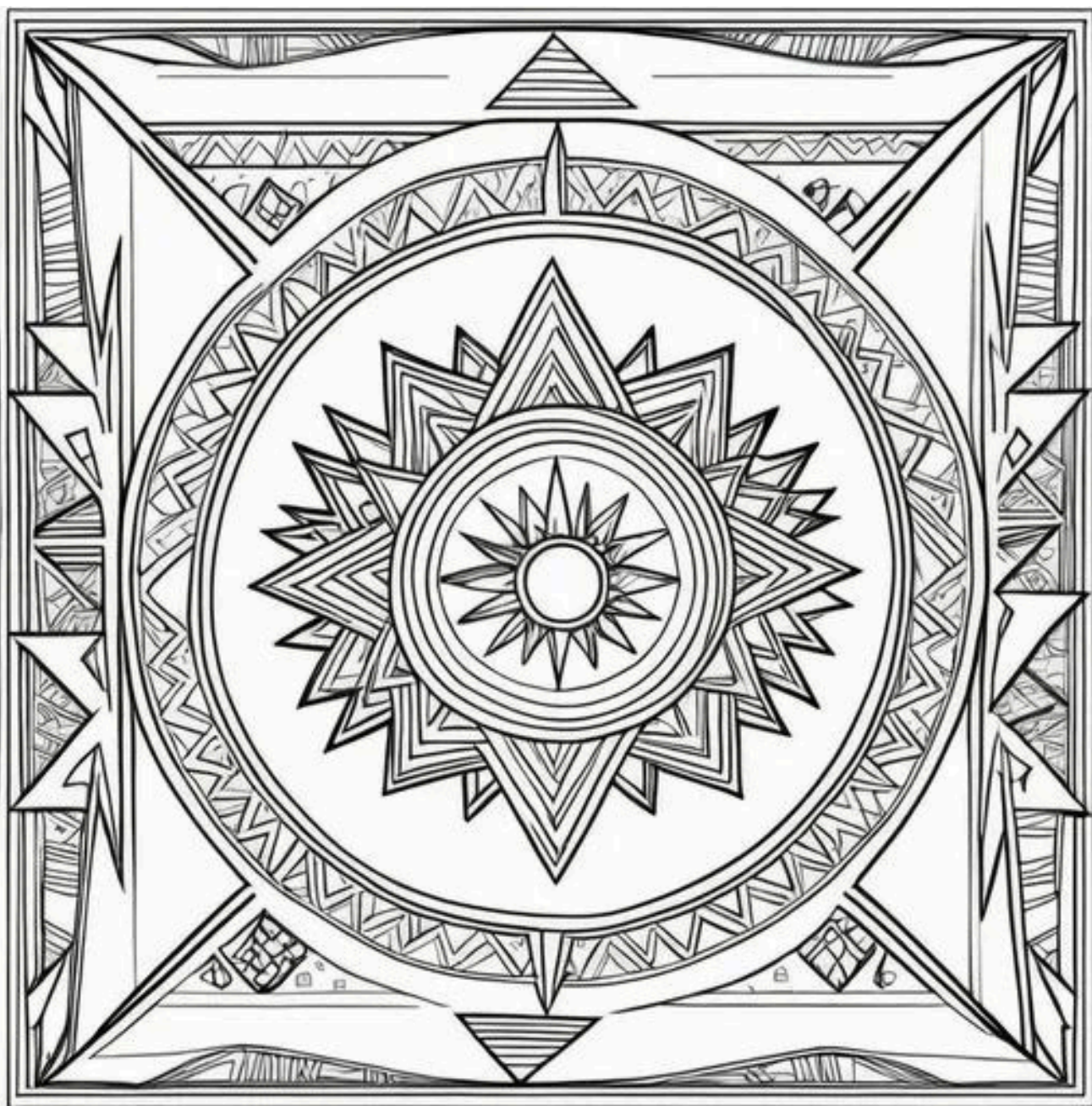
Preschool Coloring Sheet

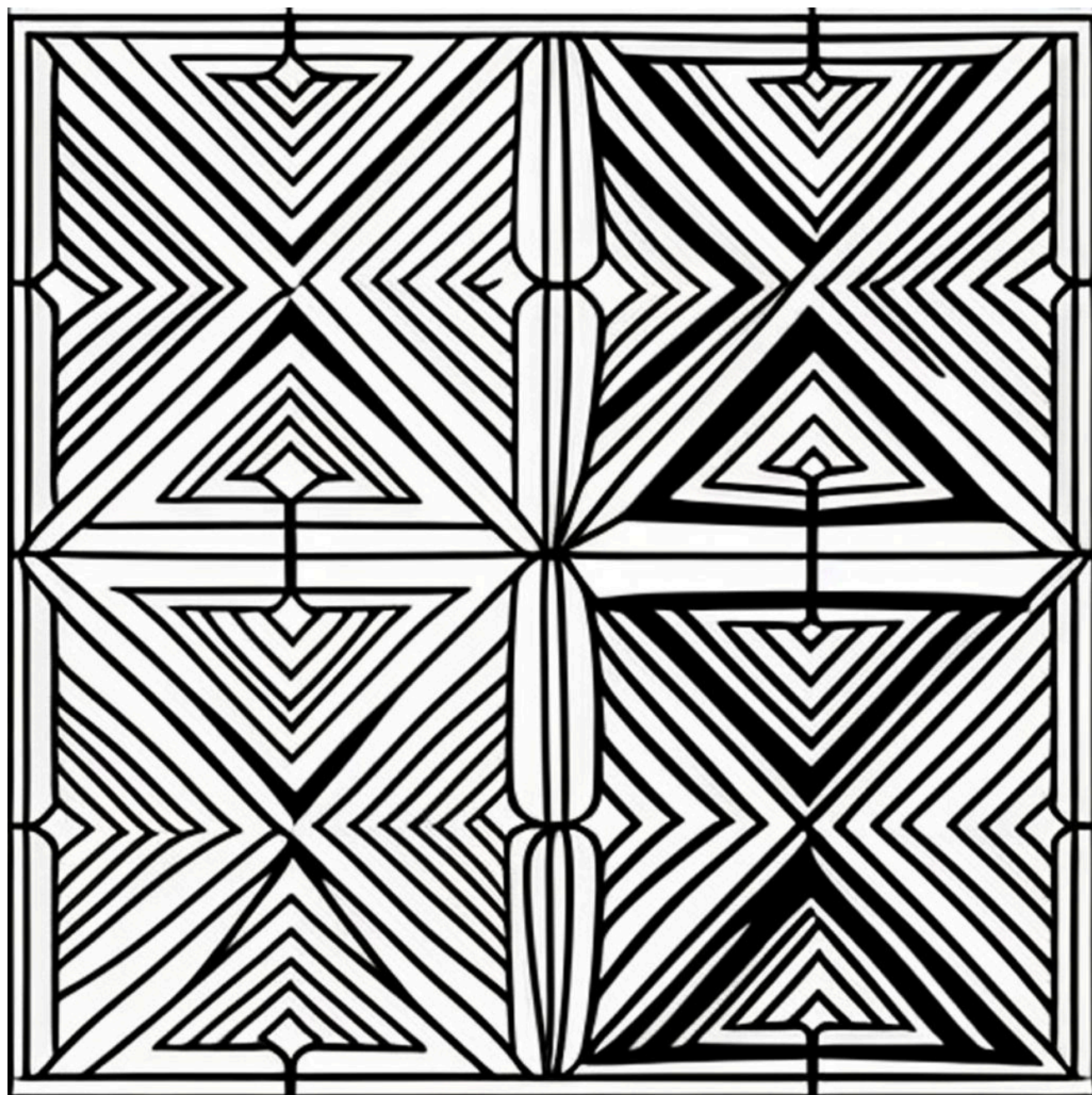


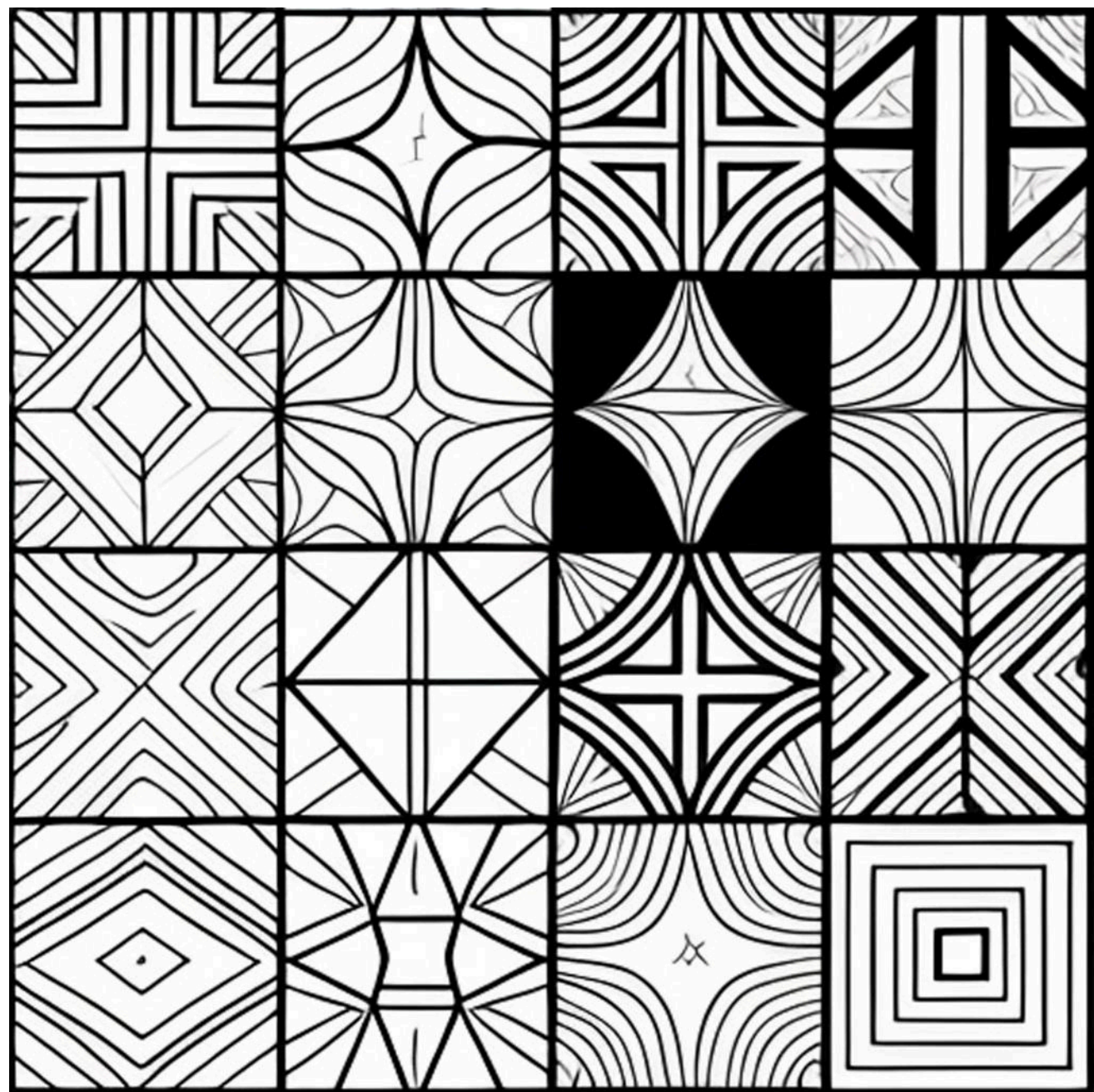














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Writing Assignments

In addition to (or instead of) the writing prompts included, you can choose a country, culture, event in history, or element of a culture to research more and write about.

Creative Writing Brainstorming

The next page is for brainstorming and developing elements of a story. Use it to help get your ideas organized and fleshed out before writing your story.

Writing an Outline

1. Pick a topic
2. Choose your three main points.
3. These three main points go under the Introduction a., b., and c. and under the Conclusion a., b., and c.
4. Also write these three main points at 2., 3., and 4.
5. Find three supporting points for each of your main points, and place them at a., b., and c. under 2., 3., and 4.

Using Your Outline

Each of your main number points (1., 2., 3., 4., and 5.) is a separate paragraph. Each of your subpoints (a., b., and c.) should be one sentence. When you are finished fleshing out your outline into your full essay, each paragraph will be 3-5 sentences long.

Creative Writing Brainstorming

Character Descriptions: _____

Setting Description: _____

Challenge or Problem: _____

Resolution: _____

Essay Topic: _____

1. Introduction

a. _____

b. _____

c. _____

2. _____

a. _____

b. _____

c. _____

3. _____

a. _____

b. _____

c. _____

4. _____

a. _____

b. _____

c. _____

5. Conclusion

a. _____

b. _____

c. _____

This is a writing prompt card designed to look like a piece of paper with a black border. At the top center, it features the title "Writing Prompt #1" in a large, black, serif font. Below the title, there is a paragraph of text in a smaller, black, serif font: "You're exploring outside your home and find a rock that seems to be carved. Describe how it has been carved, who could have carved it, and what it could have been used for." The lower two-thirds of the card are filled with horizontal ruling lines, providing space for a student's answer. The card is decorated with small details: three dots at the top left and bottom right corners, and wavy lines at the top and bottom edges.

[illegible][illegible]

[illegible][illegible][illegible]

[illegible][illegible]

This is a writing prompt card with a black border. At the top center, it says "Writing Prompt #3". Below the title, there is a paragraph of text: "Choose an event from Eastern Africa's history that you find interesting, and write a report or fictional story about it." The rest of the card is filled with horizontal lines for writing. There are decorative elements: three dots at the top left, three dots at the top right, three dots at the bottom left, and three dots at the bottom right. There are also wavy lines in the corners.

Grading Rubric

What your child produces will depend on their capabilities. Use this as a rough guide, but don't be afraid to modify it to meet your child's needs.

Early elementary

- Very basic; write 1-2 sentences OR
- Dictate a more complicated story/essay to parents that you, the parent, writes down
- Correct mechanics with your child.

Mechanics: spelling, punctuation, and grammar

Late Elementary				
	Length	Organization	Mechanics	Content
4 points	3+ paragraphs; 4-5 sentences/ paragraph	There is an introduction, body, and conclusion	Up to 2 mechanical errors	The topic is clearly defined and there are 3 or more supporting points
3 points	3 paragraphs, 3 sentences/ paragraph	There is a clear beginning, middle, and end	3-5 mechanical errors	The topic is defined and there are 2-3 supporting points
2 points	2 paragraphs, 2-3 sentences/ paragraph	There is some organization of supporting points	6-10 mechanical errors	The topic is loosely defined and there are 1-2 supporting points
1 point	1 paragraph, 3 sentences/ paragraph	There is little organization	More than 10 mechanical errors	The topic is barely defined with little or no supporting points

Grading Rubric

What your child produces will depend on their capabilities. Use this as a rough guide, but don't be afraid to modify it to meet your child's needs.

Mechanics: spelling, punctuation, and grammar

Middle School					
	Length	Organization	Mechanics	Content	Style
4	5 paragraphs; 5 sentences/ paragraph	There is an introduction, 3 body paragraphs, and conclusion	Up to 2 mechanical errors	The topic is clearly defined and there are 3 or more supporting points	Clear voice and style, consistent throughout
3	4 paragraphs, 4 sentences/ paragraph	There is a clear beginning, middle, and end	3-5 mechanical errors	The topic is defined and there are 2-3 supporting points	Voice and style is mostly consistent
2	3 paragraphs, 3 sentences/ paragraph	There is some organization of supporting points	6-10 mechanical errors	The topic is loosely defined and there are 1-2 supporting points	Voice or style is somewhat present
1	2 paragraphs, 3 sentences/ paragraph	There is little organization	More than 10 mechanical errors	The topic is barely defined with little or no supporting points	Voice and style are not developed

Grading Rubric

What your child produces will depend on their capabilities. Use this as a rough guide, but don't be afraid to modify it to meet your child's needs.

Mechanics: spelling, punctuation, and grammar

High School					
	Length	Organization	Mechanics	Content	Style
4	1-3 pages, 7+ paragraphs	There is an introduction, 5+ body paragraphs, and conclusion	Up to 2 mechanical errors	The topic is clearly defined and there are 5 or more main supporting points	Clear voice and style, consistent throughout
3	5 paragraphs, 5 sentences/paragraph	There is a clear beginning, middle, and end	3-5 mechanical errors	The topic is defined and there are 4 supporting points	Voice and style is mostly consistent
2	4 paragraphs, 4 sentences/paragraph	Supporting points are mostly organized into paragraphs	6-10 mechanical errors	The topic is loosely defined and there are 3 supporting points	Voice or style is somewhat consistent
1	3 paragraphs, 3 sentences/paragraph	There is some organization of supporting points	More than 10 mechanical errors	The topic is loosely defined and there are 1-2 supporting points	Voice or style is somewhat present