



STEAM Adventure ISLAND

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STEAM Adventure Island

Chapter 4: The Colorful Cave

OBJECTIVE:

Explore the properties of salt and color absorption by creating beautiful, colorful crystal salt paintings.

READ THE STORY:



[Click to read the story.](#)

MATERIALS:

- Salt
- Liquid Watercolors (or food coloring)
- Good quality watercolor paper or heavy cardstock
- White school glue
- Paintbrush or dropper

CHAPTER 4: THE COLORFUL CAVE

Discovering the Cave

After their exciting discoveries at the Floating Gardens and finding ancient scrolls in the boathouse, Mia, Liam, Sara, Zoe, and Jay were excited to find the Colorful Cave. Using the map they found in the scrolls, they ventured deeper into STEAM Island, eager to learn more about the island's secrets and the magical crystals.

Journey to the Colorful Cave

The path to the Colorful Cave took the young explorers through a dense, misty forest where sunlight barely touched the ground. As they ventured deeper, the air grew cooler, and the sound of dripping water echoed through the trees. Finally, they found the cave entrance, hidden behind a waterfall that cascaded down a moss-covered cliff.



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Exploring the Cave's Wonders

Inside, the cave was even more magnificent than they had imagined. The walls sparkled with crystals of every color, casting colorful reflections on the damp cave floor.

- Mia explained that the colors were due to different minerals in the rocks, each reacting differently to light.
- Liam used the crystal lens they found in the Floating Gardens to examine the light patterns more closely, noting how they changed as they moved the lens.
- Sara was curious about the structure of the cave and discussed how water had carved out such a vast space over thousands of years.
- Zoe took out her sketchbook, trying to capture the surreal beauty of the colorful reflections on the cave walls.
- Jay decided to map the cave, marking significant formations and the locations where the colors were the most vivid, turning it into a treasure map of light.



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The Cave's Secret

As they explored further, the friends discovered a series of ancient paintings on a secluded part of the cave wall. The paintings depicted various scenes of island life, showing the inhabitants using the crystals for different purposes, including some rituals and celebrations. The paintings also showed a jungle filled with musical instruments made from natural materials, hinting at a place where the islanders celebrated their connection to nature through music.

- Mia studied the drawings closely. "These scenes show how important the crystals were to the islanders' daily life and rituals."
- Liam compared the paintings to the map they had. "Look here," he said, pointing to a part of the map. "This symbol matches the one in the paintings. It leads to a place called the Musical Jungle."
- Sara nodded in agreement. "The Musical Jungle must be where they created music with natural instruments. We should definitely check it out."
- Zoe sketched the ancient paintings and the symbols, fascinated by the islanders' creative use of nature.
- Jay noted the path on the map that led to the Musical Jungle, ensuring they could follow it accurately.



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A Clue to the Musical Jungle

The friends realized that the Musical Jungle was not far from the cave. The paintings suggested that the jungle was a place where the early islanders created music that resonated with the natural environment, using materials they found in the jungle.

As the sun began to set, the friends gathered at the cave entrance to reflect on their discoveries. They realized that the early islanders had a deep connection with their environment, using its natural resources in harmony with their daily lives.

Intrigued by the idea of a jungle filled with natural melodies, the friends decided to head to the Musical Jungle next. They hoped to learn more about the islanders' music.



Activity Guide: Create Your Own Crystal Salt Painting

TEACHING STRATEGY:

1. Create the Design: Use the white school glue to draw a design on watercolor paper or heavy cardstock. Make sure the glue lines are thick enough to hold the salt.
2. Apply the Salt: While the glue is still wet, generously sprinkle table salt over the glue lines. Ensure all the glue is covered with a thick layer of salt. Gently shake off the excess salt so that only the salt sticking to the glue remains.
3. Add the Color: Using a paintbrush or dropper, gently drip liquid watercolors or food coloring onto the salt-covered glue lines. Watch as the colors spread and blend, creating beautiful patterns. Experiment with different colors and observe how they mix together.
4. Observe the Art: Allow the painting to dry completely. As it dries, the salt will absorb the colors, creating vibrant and unique artwork.
5. Discuss and Explore: Talk about how the salt absorbs the liquid colors and why it creates such vibrant effects. Discuss the science behind absorption and how different materials interact with each other.



STEAM Extensions:

SCIENCE

- **Experiment with Different Salts:** Try using different types of salts, such as sea salt or kosher salt, and observe how they affect the absorption and crystal formation. Discuss the differences in texture and appearance.
- **Color Mixing:** Encourage children to mix primary colors (red, blue, yellow) to create secondary colors (green, purple, orange). Discuss how different colors are formed and why they change when mixed.

TECH

- **Digital Microscope Observation:** Use a digital microscope to observe the salt crystals up close before and after they absorb the colors. Discuss the crystal shapes and how they change with the addition of liquid watercolors.
- **Time-Lapse Recording:** Set up a time-lapse recording to capture the process of the colors spreading through the salt. Review the video together and discuss the observations.

ENGINEER

- **Design Challenge:** Challenge children to design their own salt painting pathway or maze. They can draw specific paths, shapes, or designs with glue and then add salt.
- **Color Flow Stability:** Experiment with creating different patterns to see which ones allow the colors to flow best without spreading too quickly or getting absorbed unevenly. Discuss how the width and continuity of the salt lines affect the flow of the colors.

ART

- **Color Theory:** Introduce basic color theory concepts and ask children to create a color wheel using their salt paintings. Discuss primary, secondary, and tertiary colors and how they interact with each other.
- **Texture Exploration:** Touch and feel the textures of the dried salt paintings. Discuss how the texture adds to the visual appeal of the artwork and how artists use texture in their creations.

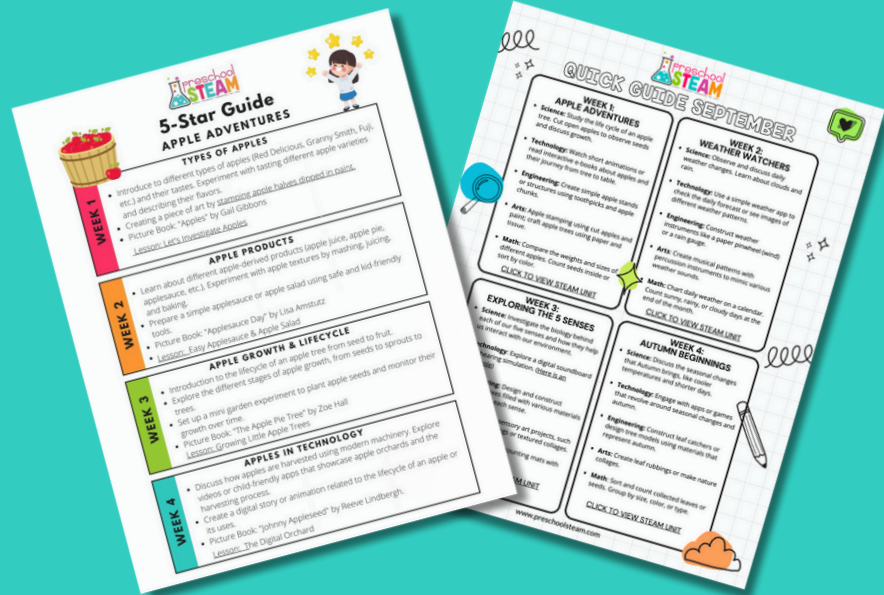
MATH

- **Pattern Recognition:** Create patterns with the glue and salt, then predict how the colors will spread and interact.
- **Measurement and Proportions:** Measure the amounts of salt, water, and colors used in the mixture.

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