

A Teacher's Craft Guide for
Sand to Stone and Back Again

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Vocabulary Match

Teachers, you have the option of printing the following eight pages on cardstock and laminate them to create a manipulative activity or print them as worksheets and allow the students to cut and paste the match.

Objective: The student will associate a particular landform with its correct term, and to further develop vocabulary to be utilized throughout the lessons in this guide.

Materials:

- The first two pages are the **Control Charts**. Students may use these as reference, if need be.
- The second two pages feature **Photographs Only Charts**.
- The second two pages feature the **Vocabulary Labels Only Charts**.
- The final two pages feature the photographs and the labels to be cut out.

Directions:

- On the final two pages, cut the labels and the photographs on the pale gray lines surrounding them creating manipulative vocabulary cards. Set the cards aside.
- Lay the **Control Charts** side by side on the table top. Study them. Look closely at the pictures. Associate the pictures with the labels. Read the words. Once familiar with photograph/word label association, turn the **Control Charts** over.
- Lay the **Photograph Only Charts** on the table. Match the word labels with the correct photograph. Check matches with the **Control Chart**. Make any necessary corrections.
- Lastly, lay the **Vocabulary Labels Only Charts** word chart on the table top. Match the photograph pieces to the correct label.

Follow Up:

Encourage the students to identify the landforms featured in to *Sand to Stone and Back Again*. How many landforms can the student identify with ease?



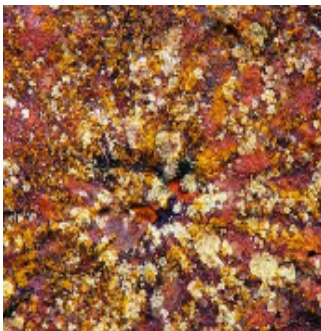
mineral jackets



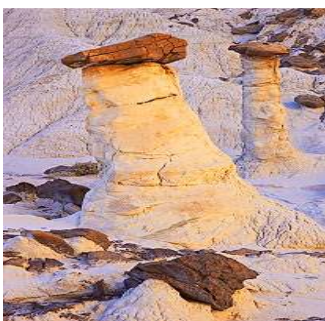
cliffs



sand dune



lichens



hoo doos



arch



boulder



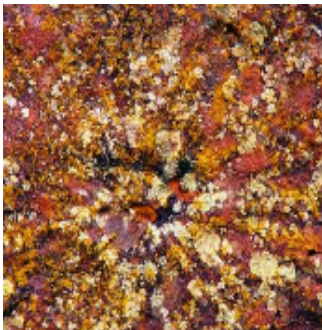
sand stone



slot canyon



sedimentary rock





boulder

cliffs

sand dune

arch

sedimentary rock

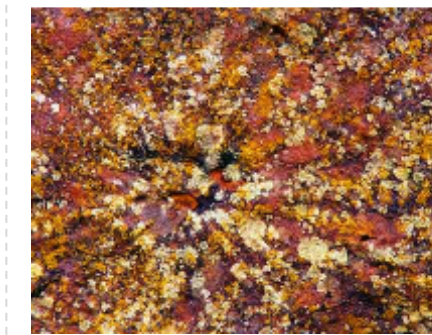
mineral jackets

slot canyon

sand stone

lichens

hoo doos



cliffs

mineral jackets

boulder

slot canyon

hoo doos

sand stone

sedimentary rock

arch

sand dune

lichens

Colored Sand Making

“Ages ago I began as a tiny grain of sand at the bottom of the sea.”

Objective: To provide the sensory experience of creating grains of sand which will eventually be altered as the lessons progress.



Materials:

- Salt (½ cup per color)
- Ziplock sandwich bags
- Dry tempera or grout colors
- Measuring cup

Procedure:

- Put ½ cup salt in a sandwich bag.
- Pour approximately 1 tbsp. of the color solution (tempera or grout color) into the bag with the salt.
- Securely zip the top of the bag.
- Squeeze and shake the bag mixing the color solution and the salt together thoroughly.
- Observe the transformed, sand-like color of the salt. Add more powdered tempera or grout color if preferred.



Follow up:

These bags of sand will be used to illustrate the concepts presented in Flood's *Sand to Stone and Back Again* in an artistic and sensorial manner.

Most of the lessons are somewhat messy and should be performed outdoors further adding to the sensory experience of the text.

Sand Painting

“Mineral jackets wrap around each sand crystal and create walls of color, ribbons and waves of color.”



Objective:

To attempt to replicate sandstone’s vivid colored layers and rough textures through the creation of a sand painting.

Materials:

- Bags of colored sand
- White craft glue
- 8 X 11 piece of poster board or a paper plate
- An old cooking sheet or tray
- A cup or can for excess sand

Procedure:

- Place poster board in the tray.
- Spread or drizzle craft glue on the poster board.
- Sprinkle colored sand over the craft glue.
- Lift poster board and shake the excess sand into cup.
- Return poster board back onto the tray and repeat procedures until sand painting is complete.



Craft glue spread on poster board.



Sand painting in progress.

Follow up:

Encourage the child to closely examine the sandstone formations featured in *Sand to Stone and Back Again* noting the distinct color changes. Can the student replicate any of the sandstone patterns? Can they create a sandstone pattern of their own?

Sand Sculpture

"Sometimes change happens where no one can see – almost invisibly."

Objective:

To provide the sensory experience of forming layers of color to create a sand sculpture similar to those featured in *Sand to Stone and Back Again*.



Materials:

- Colored sand
- Funnel
- Baby food jar
- Tray

Procedure:

- Place the funnel in the mouth of the baby food jar.
- Slowly sprinkle colored sand into the funnel.
- To create curved layers, tip the jar as sand falls from funnel.
- Alternate procedure using a different color of sand.
- When jar is filled, lightly tamp the top layer down with fingers.
- Tightly secure the jar lid.



Sedimentary Rock

“From one tiny cell, you became a person. From one grain of sand, I became a mountain.”



Objective:

To offer the student the experience of transforming sand into sedimentary rock.

Materials:

- Plastic or paper cup
- Plastic spoon
- Plaster
- Measuring cup
- Water
- Colored sand

Procedure:

- Fill cup $\frac{3}{4}$ full with plaster. Scoop a spoonful of colored sand in and mix together.
- Pour just enough water into the mixture to saturate - not soak - the plaster/colored sand mixture.
- Stir. Stir. And then stir some more.
- Observe the consistency of the mixture. It should change from thick liquid to a thicker frosting/paste-like consistency and then a final hardened mass. If meringue-like peaks can be formed at the top of the plaster stirring can finally be stopped.
- Set plaster mixture aside and let harden for at least 45 minutes.
- Sedimentary rock/sandstone has been created once mixture hardens.

Follow Up:

To further demonstrate the properties of sedimentary rock small stone or shells can be stirred into the stand-to-stone plaster mixture.



Weathering Rock

"Seasons of wind and rain wear away at my cliffs and wall. Soon my old sides sag."

Objective:

To give the child the experience of changing the shape of stone, much like the effects of weathering on sandstone.



Materials:

- The hardened plaster/colored sand mixture
- A safe yet somewhat sharp carving tool such as a screwdriver or large nail
- A tray to collect the sand-like remnants created by carving the plaster or "weathering"



Procedure:

- Peel the cup away from the plaster sandstone.
- Set plaster sandstone on tray.
- Use tool to carve.
- Gather the plaster sandstone remnants illustrating that sand has been turned into stone and then back again!

Follow Up:

Before beginning to carve, encourage the child to reread *Sand to Stone and Back Again* paying close attention to the landforms that appeal to them. How do they want to "weather" their stone? Make a hoo doo? Monument Valley mittens? A arroyo? An arch? All the while taking note that weathering has caused their stone to become sand once again.



A slot canyon!

Cave Prints

"I shelter deer, pack rats, antelope, and bats. And hikers, like you, or long ago, the Ancient Ones. In my canyons they built their homes, painted pictures, carved messages, and left handprints."



Objective:

To artistically replicate cave art.

Materials:

- A Styrofoam meat tray
- Scissors
- Tempera paint
- Small paint brush
- Small 8 X 11 piece of poster board
- A safe yet somewhat sharp carving tools such as a screwdriver or large nail



Procedure:

- Cut Styrofoam meat tray into pieces roughly 3 X 5 in.
- Carve a petroglyph into the piece of Styrofoam, forming a stamp.
- Brush tempera onto to petroglyph stamp.
- Press stamp onto poster board.
- Create cave art by making several petroglyph stamps and cover the poster board with Anasazi symbols.

A Sandy Cinquain

"I am sandstone, I am always changing. Just like you."

A cinquain is a poem that follows a prescribed form based syllabic count and specific word choice. They are great fun to write. Just follow these easy instructions and see for yourself!

First of all, let's think about the things we have learned in *Sand to Stone and Back Again*. What interested you the very most? The Anasazi? The hoo doos? The slot canyons? Maybe the arches or Monument Valley or even lichens? Right now, decide upon your favorite part of the book. Pick a topic that pleases you. This will be the title for your cinquain.

Write your topic here: _____

Next, let's think about your topic in great detail by brainstorming terms to be used in your poem. Let's make list of at least words in each of the categories listed below. Go ahead. Write away! Describe what you see in Tony Kuyper's incredible photographs. Push yourself to get at least 10 words in each column. (You might like to look back through the book because the author, Nancy Bo Flood, chose some remarkably vivid descriptive words in the story.) Below, the words printed in red are simply examples to follow. You can come up with much better words than these.

Nouns	Action words (-ing verbs)	Adjectives (describing words)	Feeling words
<i>sandy</i>	<i>blowing</i>	<i>firey</i>	<i>frightening</i>
<i>rocky</i>	<i>breezing</i>	<i>orange</i>	<i>prideful</i>

Next, use this form to establish the form of your cinquain. Write your title on the line below. The first line of your poem must be one word that is a noun and is constructed of two syllables. Look back through your list and find the best word to describe your title. Line 2 consists of two adjectives describing your title. Line 3 is created with three action words. Line four required four feeling words. Line 5 refers to the first line of your cinquain. Go ahead. You can do it. Cinquains are fun to write!

Poem Title _____

Line 1: (1 word noun-2 syllables)

Line 2: (2 adjectives-4 syllables)

Line 3: (3 action words-6 syllables)

Line 4: (4 feeling words-8 syllables)

Line 5: (1 word referring to Line 1-2 syllables)

When you have finished your poem, rewrite it on notebook paper or on the computer. Read it aloud to a friend. Feel very pleased with yourself. You have created something uniquely special. Well done!

If you'd like to share your poem with the author of *Sand to Stone and Back Again*, Nancy Bo Flood, through her website at www.nancyboflood.com she would be *very, very pleased* to read it.