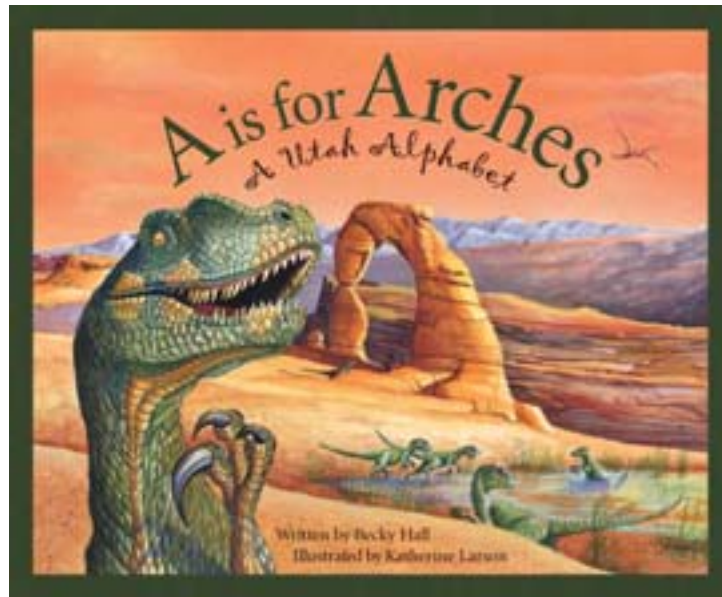


A Teacher's Guide



A is for Arches: A Utah Alphabet

**Guide Written by
Patricia Pierce**

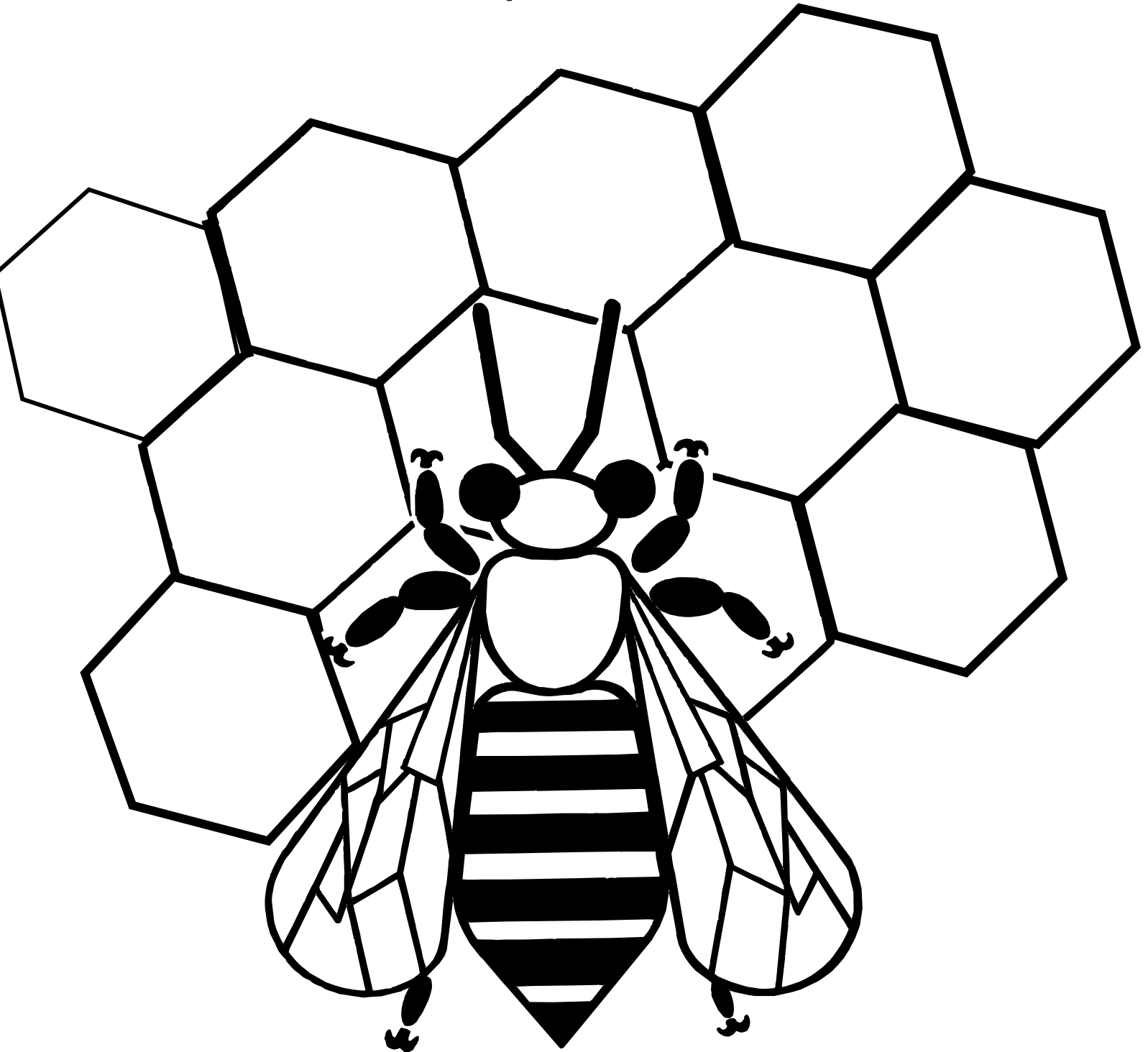
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Utah - The Beehive State

Read *A is for Arches* and list state facts and symbols in the honeycombs. View www.utah.gov/about/symbols.html for additional information on Utah's state symbols.



Busy as a Bee

Do you know why Utah's nickname is the "Beehive State"? Read page B of *A is for Arches* to find out.

Complete each sentence with an animal description.

Busy as a bee

Strong as an ox

Feisty as a wolverine

Fast as a cheetah

Wise as an owl

Hungry as a lion

1. The other runners became nervous when they saw Caleb enter the race. He is as _____.
2. Whenever Suzy has a problem, she calls her grandfather. He is as _____.
3. Kate cleaned her room, helped her mom bake cookies, watered the plants and read a book. She has been as _____.
4. Hunter moved the heavy rock away from the path. He is as _____.
5. Sarah scrambled after the basketball then quickly scored two points. Her team was behind, but she was not going to give up. She is as _____.
6. Rick didn't eat breakfast, so by noon he was as _____.

Arches National Park

Directions

Refer to page A of *A is for Arches* and choose the correct answers below.

1. The arches are [slowly] [quickly] forming all the time.
2. [Three] [Two] arches compete for the title of the world's longest natural arch.
3. The soil at Arches National Park is very [fragile] [fertile].
4. The Gila monster is a [nonpoisonous] [poisonous] lizard.
5. The arches are [man-made] [formed by nature].

List three animals that are commonly found at the Arches National Park.

=====

=====

=====



Copper

Utah's State Mineral

Utah's state mineral is copper. Read about an open pit copper mine on page C of *A is for Arches*. Copper has important characteristics that make it a valuable metal in many industries.



Copper is an excellent conductor of electricity.



Copper is recyclable. It can be used over and over again.



Copper is biostatic. This means bacteria will not grow on it.

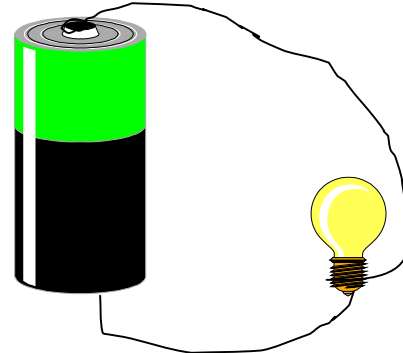
Thomas Edison's discovery of copper's ability to conduct electricity greatly impacted the use of copper in our everyday life. Copper is important in electronic devices and power generation.



Try It!

Materials

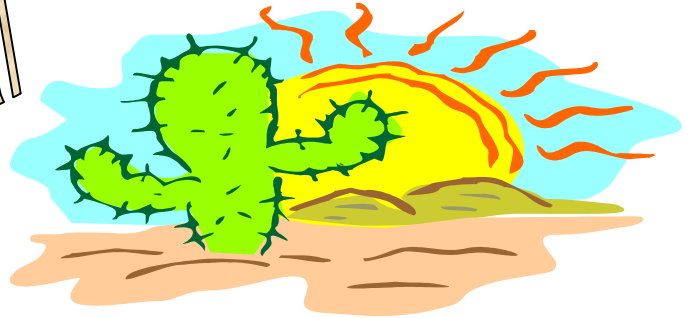
- 1 C cell battery
- 1 flashlight bulb
- 1 piece of copper wiring
- 1 piece of string
- 1 rubber band



Directions

1. Connect the wires to the battery and bulb with the copper wiring. Explain that the electric current is conducted (traveling through) the copper wiring.
2. Follow the same procedure with the piece of string and rubber band. Explain that these materials are unable to conduct the electric current.

Desert Survival



Plants and animals that live in the desert need to be able to survive with very little water. Try this activity to increase your understanding of how your life would be if you had a limited water supply.

Materials

One quart container of water, notepad and pencil

Directions

The quart container of water will be your water supply for the day. Use this water supply every time you drink water or use water, such as washing your hands/face or brushing your teeth.

Record your water usage and experiences throughout the day.

How did you feel?

Did you adapt or change your water usage or habits?

Were you more careful and aware of your water usage?

Did you notice others around you wasting water?

Did you spill or waste any water?

If you were to repeat the activity, what would you do differently?

Water Conservation

Classroom Activity

- Divide students into groups. Instruct them to make a list of the ways we use water. (*Examples: drinking, eating, laundry, dishes, toilet, bath, shower, lawn, garden, swimming pool, water parks, etc.*)
Have one group report their answers while the remaining groups check off responses that are the same on their lists. Allow remaining groups to share additional ideas.
- Discuss ways to conserve water, then give your class the following true/false quiz on water conservation. Students respond by thumb up/thumb down.
(Thumb up - True Thumb down - False)
- Complete the pledge card.

Water Saving Tips - True/False Quiz

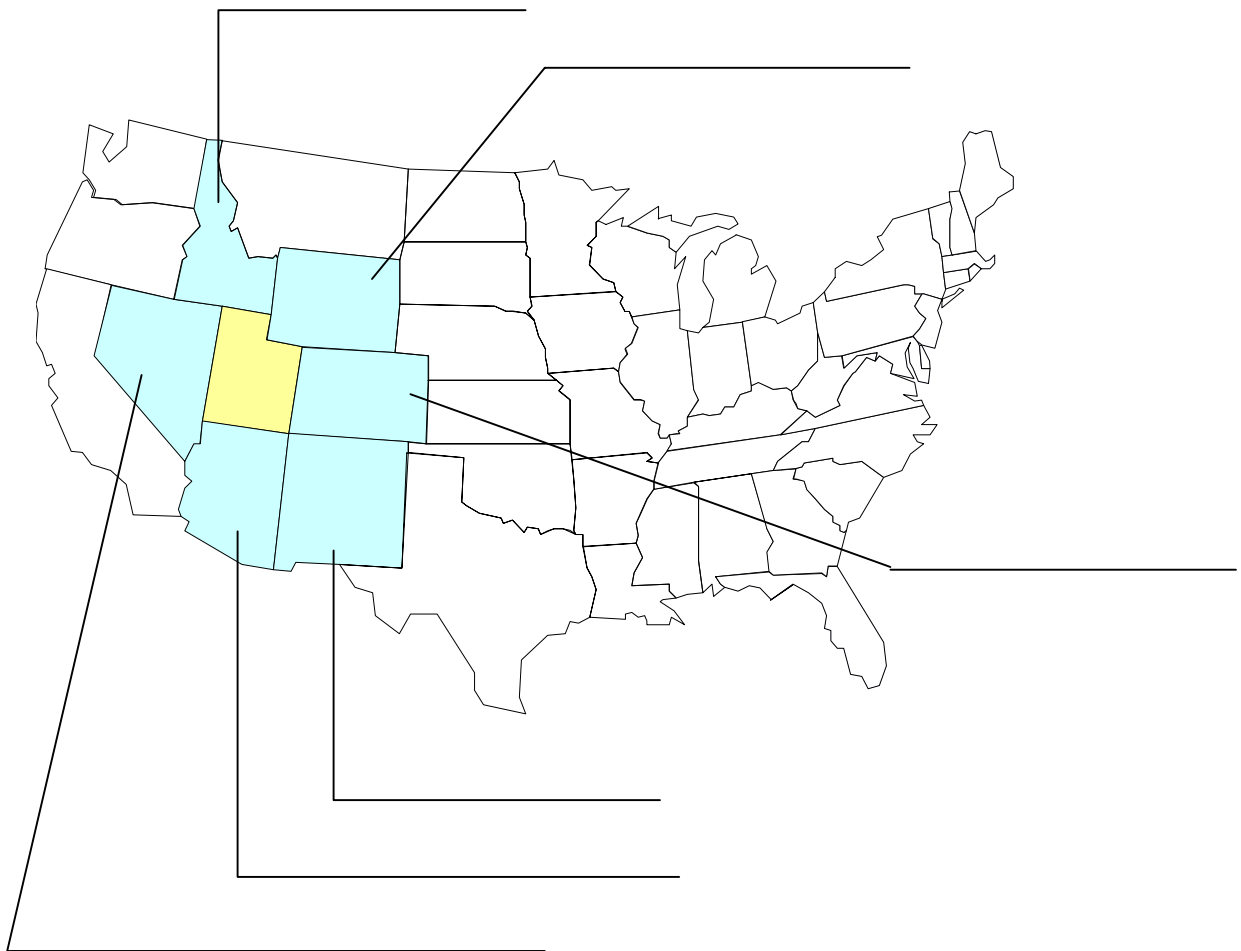
1. Adjust sprinklers to water the lawn and not the pavement. (True)
2. Only put in half a load of laundry. (False)
3. Leave the water running while brushing your teeth. (False)
4. Don't fill the bathtub completely full. (True)
5. Leave the hose running when washing the car. (False)
6. Turn off a dripping faucet. (True)
7. Take long showers. (False)
8. Use an automatic dishwasher instead of washing dishes by hand. (False)

I pledge to conserve water by

Signature

Date

Utah's Neighbors



Label Utah's neighboring states

Idaho Wyoming Colorado

New Mexico Arizona Nevada

List the states that create Four Corners.

**Extra! Extra!
Read All about It!**



Grab your notebook and pen! A miraculous news event is on page G of *A is for Arches*.

Complete the following outline and then write a news article about Utah's state bird.

Headline _____

Who _____

What _____

When _____

Where _____

Why _____

Handcart Math



Directions

Solve each problem below to determine if each handcart load is within the weight limit of 400 to 500 pounds. Cross out the boxes that are over the weight limit.

Adult baggage - 17 pounds each

Children baggage - 10 pounds each

1.

25 adult bags
5 children bags

2.

30 adult bags
10 children bags

3.

20 adult bags
35 children bags

4.

15 adult bags
20 children bags

Pack Your Bags

Three thousand people from 1856 to 1860 moved to Utah, hauling their items in handcarts. Circle the items that might have been packed.

Dutch oven	CD Player	Diary	Shoes
Dresses	Bedding	Cell Phone	Dishes

List five items of your personal belongings that you would pack.

What one item would be the most important item to you?

Memory Game

Add items to the handcart in alphabetical order. On each turn, players repeat items, then add one more item to the trunk. Can you make it all the way to Z?

Example: We are moving to Utah and will pack:

A - Apple

We are moving to Utah and will pack:

A - Apple

B - Book

We are moving to Utah and will pack:

A - Apple

B - Book

C - Cookies

The list continues to the letter Z. Allow for clues if a player has difficulty remembering items. All players try to repeat the entire list after the letter Z item is stated!

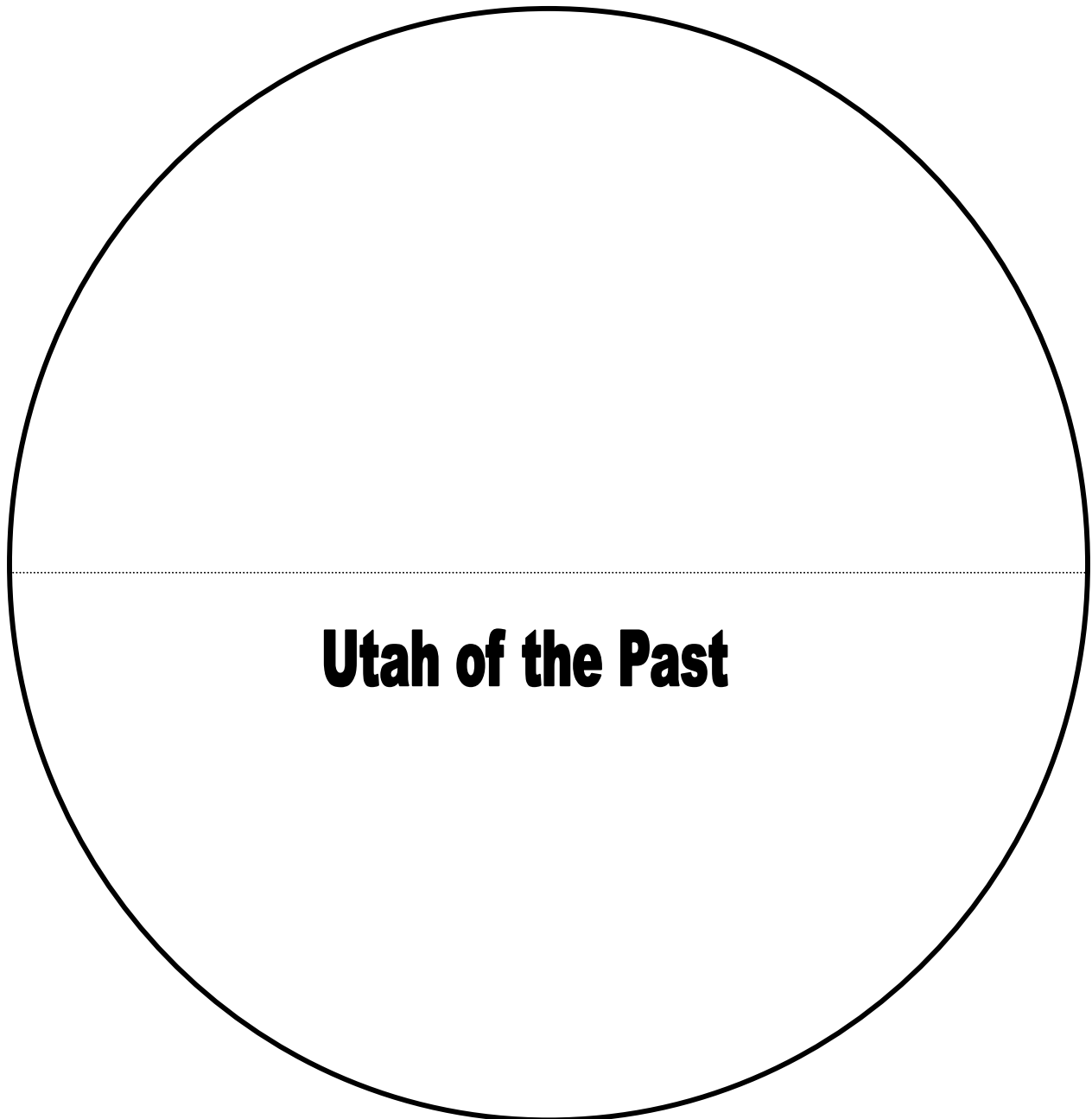
Who Am I?

Try to match the names of some of Utah's famous people with the information about them. Skim and search *A is for Arches* for information.

- | | |
|---|--|
| 1. Brigham Young | A. First white men to enter Utah |
| 2. George A. Smith | B. Discovered Utahraptor |
| 3. Jim Bridger and Jedediah Smith | C. Led the first settlers to Salt Lake Valley |
| 4. George Leroy Parker | D. Developed first artificial human heart |
| 5. Joe Quinney | E. Leader of St. George, a community known as Utah's "Dixie" |
| 6. Dr. Willem Kolff and Dr. Robert Jarvik | F. Outlaw "Butch Cassidy" |
| 7. Robert Gaston | G. Formed the Salt Lake City Winter Association |

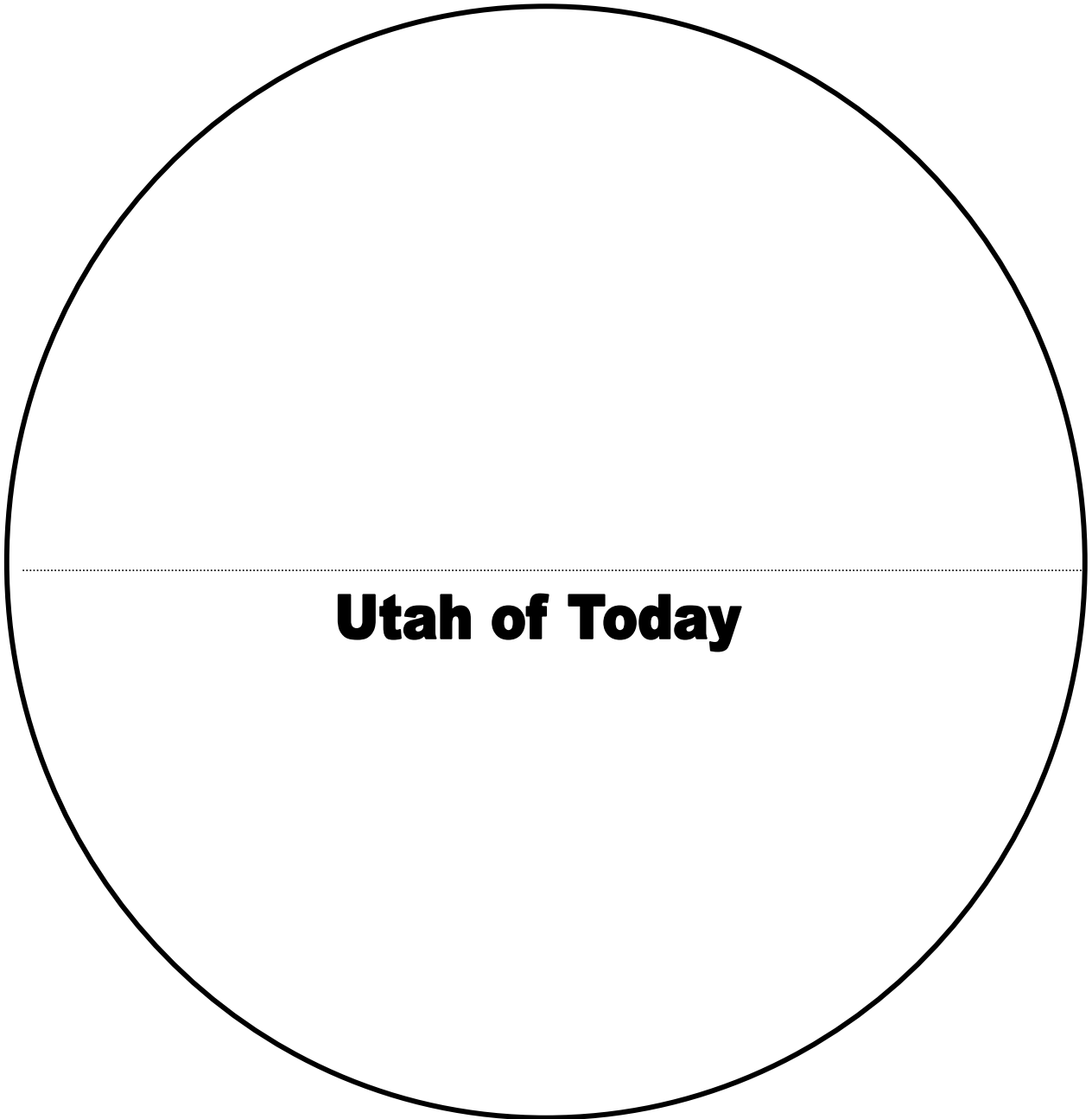
Utah of the Past and of Today

Read *A is for Arches*. Draw a picture of a past time or event of Utah on the top half of the circle. Write a brief summary on the bottom half of the circle. Cut out the circle and fold along the dotted line. Place the folded circle with the bottom half resting on your desk and the top half positioned vertically.



Now draw a picture of a current time or event of Utah on the top half of the circle and write a brief summary on the bottom half of the circle. Cut out the circle and fold along the dotted line. Place the folded circle with the bottom half resting on your desk and the top half positioned vertically.

Place the two vertically positioned circles back-to-back and glue together.



WHERE AM I IN UTAH?

Directions

Skim and search *A is for Arches* and read the following clues to discover interesting places in Utah.

1. I am at a spring event and dressed as an authentic Mountain Man, pretending to be Jedediah Smith.
Where am I? _____
2. I am at a Navajo Reservation where I can be in four states at one time. Where am I? _____
3. I am at one of the world's leading artificial organ research centers. Where am I? _____
4. I am at a lake that is four times saltier than the oceans. Where am I? _____
5. I am at the oldest settlement in Utah that started as a trading post. Where am I? _____
6. I am at a park with a canyon that is 2,400 feet deep and one-half mile wide. Where am I? _____
7. I am watching scientists uncover dinosaur bones at the location where the world's most complete dinosaur remains have been found. Where am I? _____
8. I am at Utah's state capital, founded by the Mormons in 1874. Where am I? _____

Dinosaur Dig

Excavate "fossil" puzzle pieces in your own classroom dinosaur quarry. Review pages U and V of *A is for Arches* and discuss the dinosaurs that were found in Utah.

Materials

- A dinosaur puzzle
- Cardboard box
- Spoons (for shovels)
- Paintbrushes
- Soil
- Rocks

Directions

1. Divide students into groups and prepare "dig sites" by filling boxes with soil. Add five puzzle pieces and a few rocks within the layers of soil.
2. Trade "dig site" boxes so each group is working on a different box than the one they prepared.
3. Dig and brush carefully to find and remove the "fossil" puzzle pieces.
4. After pieces have been excavated, put the puzzle together.



Tasty Dig!

Consider using crushed cookies in chocolate pudding with gummy or candy dinosaurs layered in the yummy mixture for a tasty dig for younger students.

UTAH CROSSWORD

1. State flower
2. State dinosaur
3. State rock
4. State gem
5. State bird
6. System used to supply water
7. Dr. Jarvik and Dr. _____ developed the first artificial human heart.
8. _____ "dry" gardening - used to conserve water.
9. State mineral
10. State motto
11. Dome-shape building where the Mormon Tabernacle Choir sings
12. State animal

The crossword puzzle grid is shown with the following letters filled in:

- 1. S
- 2. A
- 3. L
- 4. T
- 5. L
- 6. A
- 7. K
- 8. E
- 9. C
- 10. I
- 11. T
- 12. Y

Shaded cells are located at the following grid coordinates (row, column): (1,5), (5,10), (11,7), and (12,4).

Utah Word Search

UTAH	HONEYBEE	ELK	TOPAZ
ZION	XERISCAPE	ALTA	IRRIGATION
COAL	UTAHRAPTOR	COPPER	SALT LAKE CITY
MORMON	ALLOSAURUS	VERNAL	INDUSTRY

M X U T O H A L L O S A U R U S T E L Z I M
O E Z I T O C M O T O C L V T C O A T Z M O
R R S N R N A I X X M Z L E A M P M U T A R
M A I A C E L U R E L I A L T A Z L T C L M
O T C O L Y I T T R R V E C O L A V A H U V
N X E R U T A R A L Z I T X E R I L H O T A
L A L T A L L I R R A U S V I N V E R N A L
U T A H T M S A L T L T I C I R R L A C O T
T O M O R O M V K Z L A N S A L T L P I C Z
Z X L N E R P L X E L V D N I P D A T O P V
I A E N X L K A E X C E O M O R E I O I T C
C N I R E A K R X E Z I O T L I N D R R O O
O T D V T L I M V R T U T A L L H V T R P A
H O N U I R R C O A I T I Y N R M O U T A Z
V P M T S A L T G R R A N Z R Z I O N V Z I
E O H V E T Z I O E M M D I A L L O X E R R
Z C O P P E R N X N H O N E Y B E E I A L R
I R N C R R L Y I R R I T L N D A L L O V I
O Z B V I X E R N C O A L I I R R Z M O N Z

Answer Page

Busy as a Bee

1. Fast as a cheetah
2. Wise as an owl
3. Busy as a bee
4. Strong as an ox
5. Feisty as a wolverine
6. Hungry as a lion

Arches National Park

1. Slowly
 2. Two
 3. Fragile
 4. Poisonous
 5. Formed by nature
- Common animals of the area include the Gila monster, mule deer, coyote, gray fox, ground squirrels, collared lizards, and rattlesnakes.

Utah's Neighbors

States that create Four Corners: Utah, Colorado, New Mexico, Arizona.

Handcart Math

1. Adult bags = 425 pounds Children bags = 50 pounds Total = 475 pounds
2. Adult bags = 510 pounds Children bags = 100 pounds Total = 610 pounds
3. Adult bags = 340 pounds Children bags = 350 pounds Total = 690 pounds
4. Adult bags = 255 pounds Children bags = 200 pounds Total = 455 pounds

Problems number 2 and 3 were over the weight limit.

Pack Your Bags

Items that might have been packed were the Dutch oven, diary, shoes, dresses, bedding, and dishes.

Who Am I?

1. C
2. E
3. A
4. F
5. G
6. D
7. B

Where Am I?

1. Fort Buenaventura - Rendezvous
2. Four Corners
3. University of Utah
4. Great Salt Lake
5. Ogden
6. Zion National Park
7. Vernal - Dinosaur Quarry
8. Salt Lake City

Utah Crossword

1. Sego Lily
2. Allosaurus
3. Coal
4. Topaz
5. California Gull
6. Irrigation
7. Kolff
8. Xeriscape
9. Copper
10. Industry
11. Temple Square
12. Rocky Mountain Elk