This journal belongs to:

_____

NAME

CLASS ROOM

DATE

Contents:

The Water Cycle

What I'll Learn

The Water Cycle has three basic parts: evaporation (when water turns from a liquid into a gas), condensation (when water vapor turns from a gas into a liquid), and precipitation (when liquid or solid water falls down onto the surface of the Earth).

What Will Happen

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how long will it take my water cycle model to rain down water?

- ○ 1 hour or less
- ○ 2 hours
- ○ 3-5 hours
- ○ 6-10 hours
- ○ 1 day or longer

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Salty Seas Separation

What I'll Learn

Desalination is the process of removing salt and other dissolved minerals from water. Even though California is next to the world's largest ocean, it is expensive and difficult to turn ocean water into drinking water.

What Will Happen

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: what will my clean water taste like?

- ○ Salty
- ○ Sweet
- ○ Fresh, clean water
- ○ Slightly salty

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Water Cycle Comic Strip

What I'll Learn

Now that you know about the stages of the Water Cycle, make an artistic story following a water droplet as it travels through the Water Cycle. Don't forget to label the different stages in your comic!

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: where does the water in clouds come from?

- ○ It is always in clouds but the clouds move around
- ○ It comes from outer space
- ○ It evaporates up from the water on earth
- ○ That is not water, it is cloud dust

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Congratulations!

By completing the previous 3 activities, you earned the H_2O Now You Know Badge. Color it in below:

H_2O Now You Know

The Ups and Downs of Topography

What I'll Learn

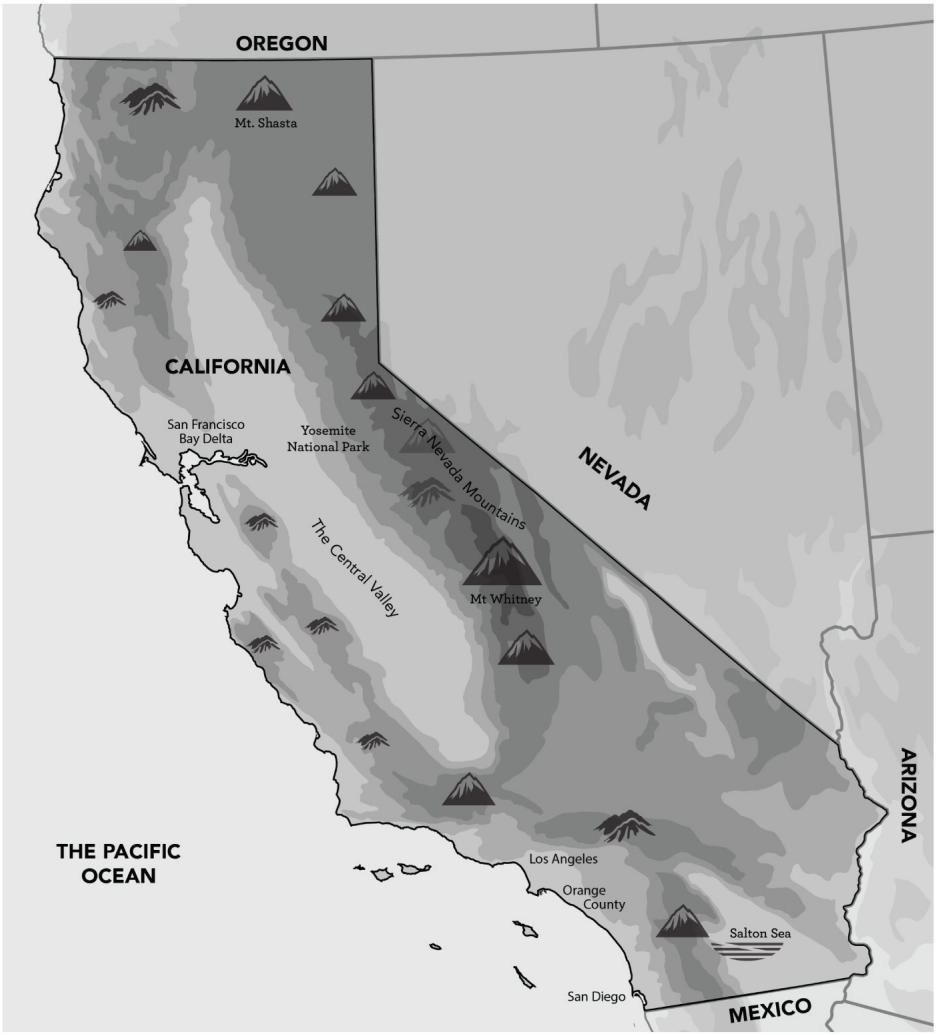
Much of Southern California's water comes from snow melting in the tall California mountains.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how many mountain ranges are in California?

- ○ 3
- ○ 12
- ○ 352
- ○ 4,421


OREGON
Mt. Shasta
CALIFORNIA
San Francisco
Bay Delta
Yosemite
National Park
Sierra Nevada Mountains
NEVADA
The Central Valley
Mt Whitney
ARIZONA
THE PACIFIC
OCEAN
Los Angeles
Orange
County
Salton Sea
San Diego
MEXICO

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Engineer an Aqueduct

What I'll Learn

Engineers build aqueducts to bring clean, fresh water from places where it rains or snows to places where people live in more arid environments, like Southern California.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how many twists, turns, or loops can you create in your home-made aqueduct maze through which your "water" will travel?

- ○ 0
- ○ 1
- ○ 2
- ○ 3+

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Aquifer Parfait

What I'll Learn

Aquifers are natural underground storage systems for water.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: will "contaminated water" be able to make its way into my aquifer parfait?

- ○ Yes
- ○ No

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Congratulations!

By completing the previous 3 activities, you earned the Go with the Flow Badge. Color it in below:

Go with the Flow

What's My Water Footprint?

What I'll Learn

We all use water every day to drink, cook, and clean, but it's also used to make the clothes we wear, the food we eat, and the gas we use to power our cars.

What Will Happen

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: where do I use the most water?

- ○ In the bathroom
- ○ In the kitchen
- ○ In my yard, garden, or green space
- ○ In my bedroom
- ○ In my closet

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Scratch the Surface: Learn to Code

What I'll Learn

Block-based coding allows you to easily give your computer a set of instructions to follow. This is a fun way to create an interactive game to play with your family and friends.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how many blocks of code will I use to create an interactive game using Scratch?

- ○ 5 or fewer
- ○ 6-10
- ○ 11-19
- ○ 20 or more

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

My T-Shirt's Water Story

What I'll Learn

A lot goes into a t-shirt's water usage during its lifetime. From the material used, to the manufaturing process, to the transportation, to the washing, water is used at every stage.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: what t-shirt material requires the most water to create?

- ○ Bamboo
- ○ Cotton
- ○ Wool
- ○ Polyester
- ○ Linen

Reference Charts

Material	Source	Raw Material
Cotton	Natural	Plant
Polyester	Synthetic	Oil (Plastic)
Nylon	Synthetic	Oil (Plastic)
Acetate	Synthetic	Oil (Plastic)
Acrylic	Synthetic	Oil (Plastic)
Spandex (Lycra)	Synthetic	Oil (Plastic)
Rayon	Synthetic	Plant
Lyocell	Synthetic	Plant
Wool	Natural	Animal
Silk	Natural	Animal
Linen	Natural	Plant
Bamboo	Natural	Plant

Material	Water to Grow/ Make Raw Material	Water in Energy to Make Shirt
Cotton	very high amount	low amount
Polyester	small amount	high amount
Nylon	small amount	high amount
Acetate	small amount	high amount
Acrylic	small amount	high amount
Spandex (Lycra)	small amount	high amount
Rayon	high amount	high amount
Lyocell	high amount	high amount
Wool	high amount	low amount
Silk	high amount	high amount
Linen	small amount	low amount
Bamboo	small amount	high amount

Reference Charts

Material	Common Raw Material Origin
Cotton	India
Polyester	China
Nylon	China
Acetate	China
Acrylic	China
Spandex (Lycra)	China
Rayon	India
Lyocell	India
Wool	China (or New Zealand)
Silk	Thailand
Linen	China
Bamboo	China

Material	Recommended Washing Frequency
Cotton	2-3 wears
Polyester	3-4 wears
Nylon	2-3 wears
Acetate	2-3 wears
Acrylic	2-3 wears
Spandex (Lycra)	2-3 wears
Rayon	2-3 wears
Lyocell	2-3 wears
Wool	5-6 wears
Silk	1 wear
Linen	4-5 wears
Bamboo	3-4 wears

A Picture of My Shirt	Materials in My Shirt natural or synthetic
How Much Water it Took to Make My Shirt	Where the Raw Material Came From

Where My Shirt Was Made	How My Shirt is Washed
How Many Times I Can Wear My Shirt per Wash	How Long I Will Keep My Shirt and Where it Goes After

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Watershed Model

What I'll Learn

You may live downstream from another part of your watershed, and the water that flows past your home or school will probably go toward someone else's home. You can do your part to keep the water clean by picking up trash and being careful not to over fertilize plants.

What Will Happen

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: where will the water in my watershed model gather and "pool"?

- ○ In the highest parts of the model
- ○ In the middle parts of the model
- ○ In the lowest parts of the model

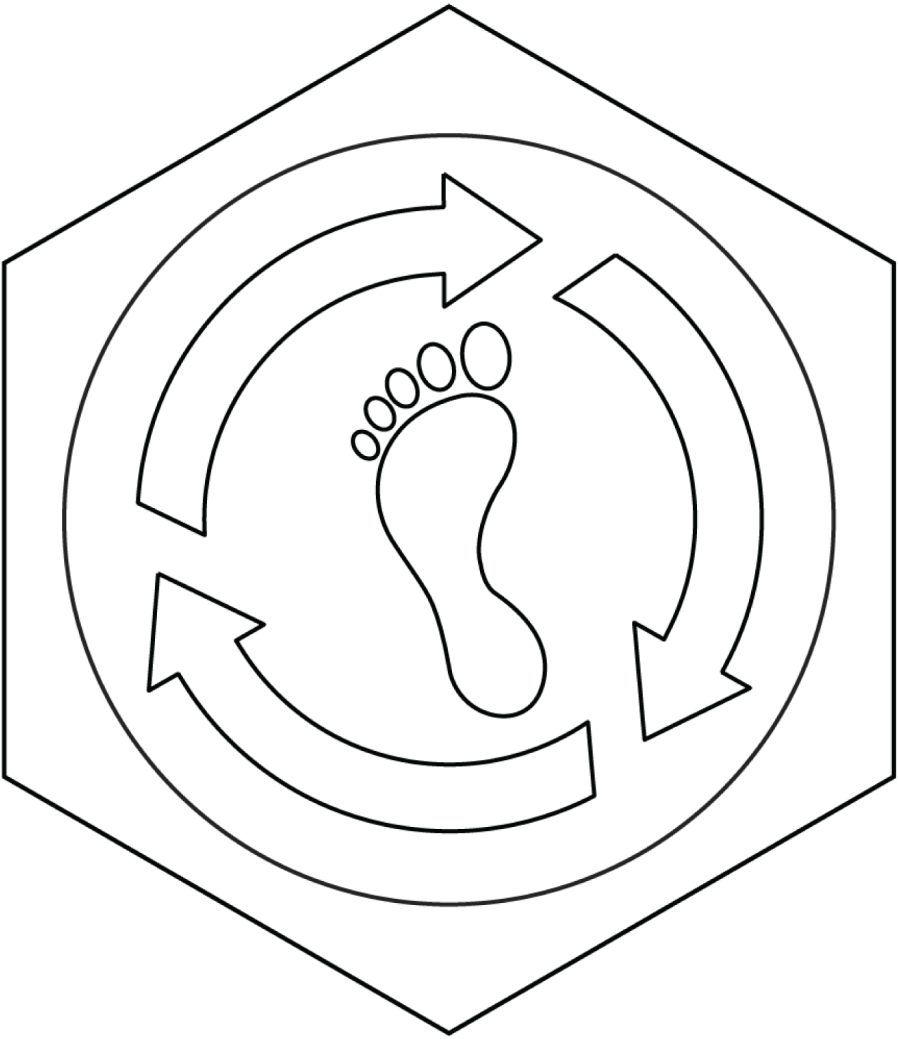
What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Congratulations!

By completing the previous 4 activities, you earned the Water Wise Badge. Color it in below:



Water Wise

The Air I Breathe

What I'll Learn

The quality of the air around you is constantly changing based on the temperature, humidity, direction and strength of the wind, and location of nearby fires or factories.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how many particles will I find in my air?

- ○ Less than 5
- ○ 6-10
- ○ 11-20
- ○ 21-100
- ○ More than 100

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

What I'll Learn

Wind turbines can give us clean electrical energy. As the blades on a turbine spin, the energy of the wind is converted into electrical energy.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how few blades can I use to make my wind turbine generate energy?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Flip the Switch: Simple Circuits

What I'll Learn

When you flip a light switch on, you have created a closed electrical circuit. When you turn a light switch off, you have made an open electrical circuit.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how few materials can I use to create a closed circuit?

- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5+

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Cooking with the Sun: Solar Ovens

What I'll Learn

The sun is a very powerful source of renewable energy. Renewable energy is energy created from the Earth's natural resources that cannot be used up or exhausted.

What Will Happen

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how long will it take my solar oven to heat my food?

- ○ 15 minutes or less
- ○ 16-30 minutes
- ○ 31-60 minutes
- ○ 1-2 hours
- ○ More than 2 hours

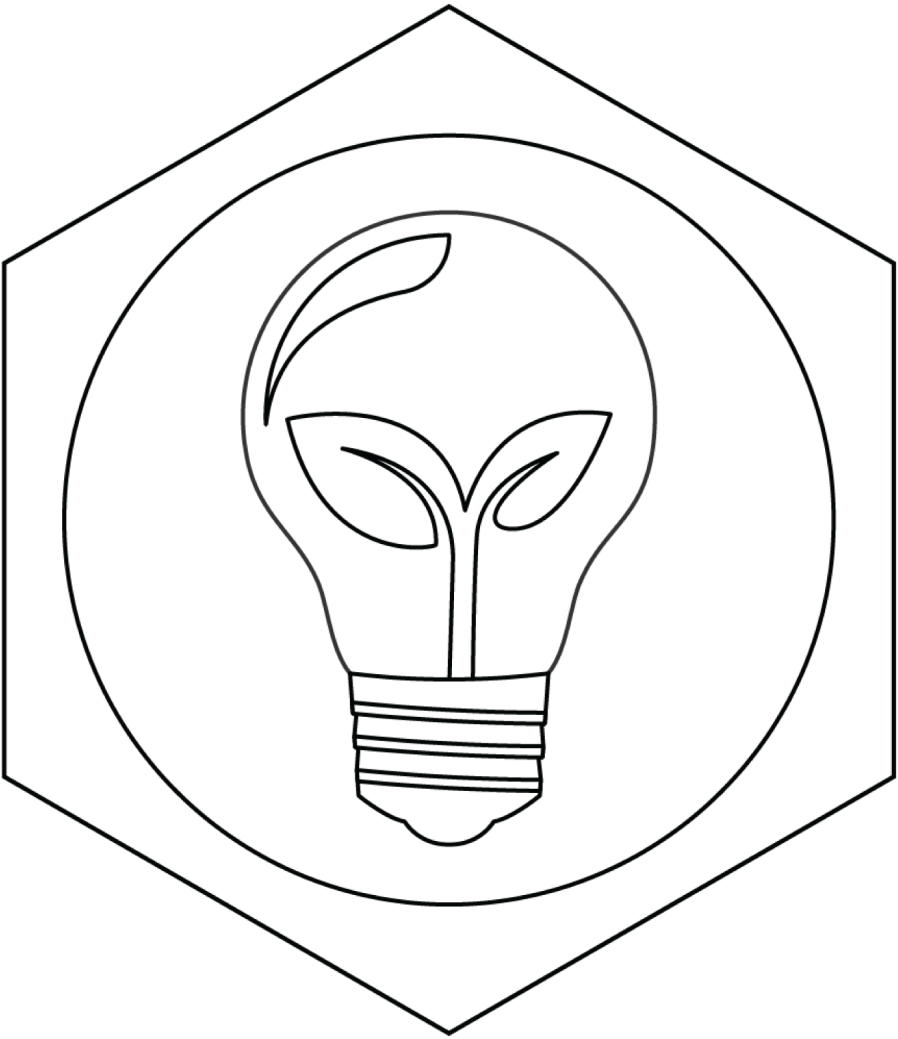
What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Congratulations!

By completing the previous 3 activities, you earned the Power Up Badge. Color it in below:



Power Up

Water Scavenger Hunt

What I'll Learn

Water can be found in many different places around your school and home. Water is used for cooking, cleaning, and drinking. But water leaks waste clean water, can harm your school or home, and mean you have to pay for water you aren't using, so it's important to find and fix leaks as quickly as possible.

What Will Happen

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how many water sources are in your school?

- ○ 1
- ○ 2-3
- ○ 4-5
- ○ 6-9
- ○ 10+

Area	*At School*	*At Home*	*Leaks?*
Bathroom			
Kitchen			
Laundry (if applicable)			
Outdoors			

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

Reduce Your Energy Use

What I'll Learn

I can develop simple habits to help reduce my energy use.

What Will Happen ?

Scientists ask questions and make predictions before they start investigating.

Let's hypothesize: how many times will I reduce my energy use this week?

- ○ Less than 5 times
- ○ 6-10 times
- ○ 11-15 times
- ○ 16-20 times
- ○ More than 20 times

What I Discovered

Tell us a little about what you discovered while doing this activity.

Or draw a picture:

DiscoveryCube