



McCall Outdoor Science School

an experience for all learners

Pre-MOSS Winter Classroom Activities

Hello teachers!

These classroom activities are designed to activate your students' prior knowledge to ensure a valuable, constructive experience at MOSS. They address Idaho science standards (see last page), should take only about half an hour, and require simply a copy of the following packet for each student. The activities promote ecological thinking and team skills, encourage positive excitement for MOSS, and help prepare the students for their experience.

The activities are in a suggested sequence, but feel free to pick and choose as you feel necessary. The majority of the questions do not have a single correct response, instead the aim is to encourage scientific thought processes. However, there is an answer key to the convergent questions for the puzzle busters section if you choose to discuss your students' responses.

Be sure to check out the "What to Expect" Powerpoint on our website under the "MOSS Materials for Download" section if you want help introducing MOSS to your class.

Thank you. We hope your students enjoy these activities and have a great time at MOSS!

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Hi students! The following activities will help you prepare for your MOSS experience. We can't wait to have you come join us at MOSS!



Research Racers

Time how long it takes you to look up the definition for **organism** from 2 sources (such as a textbook, a dictionary, the Internet, your teacher...).

Write the definitions here-

Record your time here:



Next, work with a *partner* to find the definition for **ecology** from 2 sources.

Write the definitions here-

Time with a partner:



Research Racers, cont'd

Which was faster?

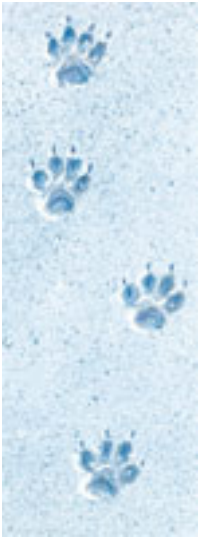
Why?

What kinds of tasks are better to do in a group, and what kinds are better to do individually?

* Learning at MOSS occurs in a team, write down one way you can you be an effective team member.

Puzzle Busters

Winter Ecology



You might find tracks that resemble these pictures. Under each, write the name of an animal that may have caused the tracks.



What additional information about the tracks could help you identify what species they are from?

 Check out this climate data. How many months is there snow in McCall?

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
Average Snow Depth (inches)	27	33	28	8	0	0	0	0	0	0	3	14

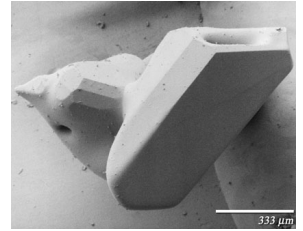
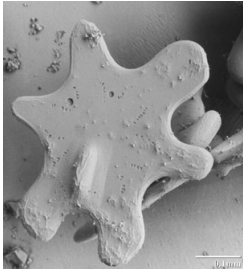
Source: Western Regional Climate Center

How can these animals stay in McCall in the long, cold winter?

Bonus: Can you come up with any things that help the plants survive the winter?

Puzzle Busters

Snow Science



Snow crystals in the snow pack typically take on one of these two shapes. Can you find three differences between these types of snow crystals?

1)

2)

3)

Why do you think they are so different?

Draw an arrow on this cup where you think the **water line** will be when all the snow **melts**. Explain your reasoning for your position.



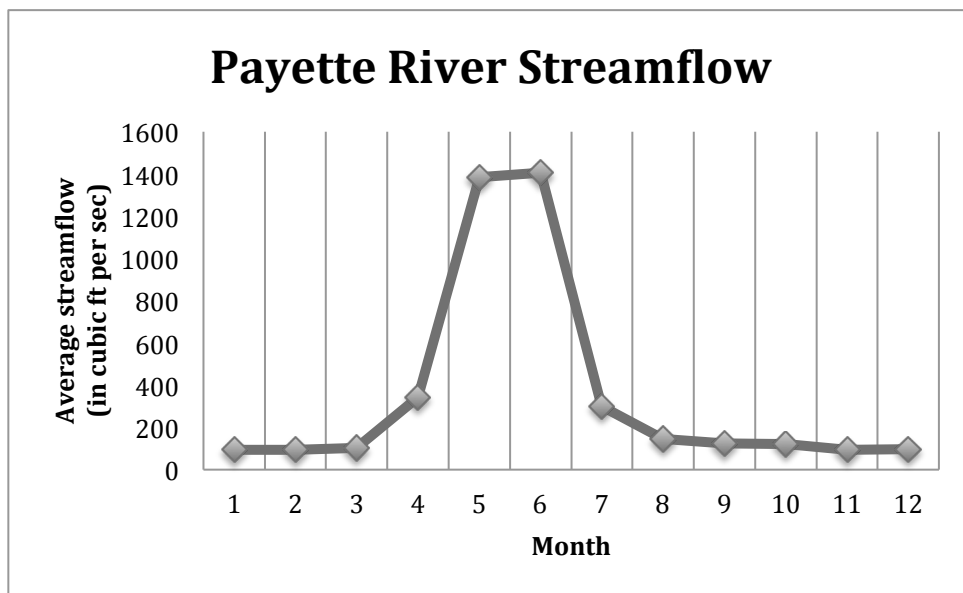
Puzzle Busters

Snow Science, cont'd



This USGS station, located near MOSS, measures the **streamflow** of Payette River. Streamflow refers to the amount of water flowing by.

Data from this station can be used to create a graph of annual streamflow.



During which three months is streamflow **increasing** the most? (Month 1= January, 2= February...)

Why do you think streamflow is increasing so much during these months?



Prediction Wizards

What plants do you think you'll see at MOSS?

Look up the 5-day **weather forecasts** (or ask your teacher for the forecasts) for McCall and your town. How do they differ?

How can you be prepared for the weather?

MOSS stands for McCall Outdoor Science School, how will MOSS be **similar** to your school? How will it be **different**?



Cool Collectors



Guess how many plants you can see by looking outside a classroom window for 10 seconds.

Write your prediction here:

Why did you guess this number?

Now, collect your data. Count the number of plants you can see in 10 seconds. Record your results here:

How do your results relate to your prediction?

Compare your results with a classmate. Did your peer get the same or a different number? Come up with an explanation for what you found out.

Do you think you would get different results in a different season?



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See you soon at MOSS!

Answer Key
To specific Puzzle Buster questions

Winter Ecology

What additional information about the tracks could help you identify what species they are from?

Location, dimensions

Check out this climate data. How many months is there snow in McCall?

6

How can these animals stay in McCall in the long, cold winter?

- Hibernate
- Live in the snowpack to stay warm
- Huddle together
- Body adaptations to travel in the snow (i.e. snowshoe hare's large feet)
- White camouflage to avoid predation

Snow Science

During which three months is streamflow increasing the most? (Month 1= January, 2= February...)

March, April, May

Why do you think streamflow is increasing so much during these months?

Highest rate of snowmelt

Idaho Education Standards

Science standards addressed by these activities

Standard 1: Nature of Science

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

5.S.1.2.1 Use observations and data as evidence on which to base scientific explanations and predictions.

6.S.1.2.2 Use observations to make inferences.

Goal 1.3: Understand Constancy, Change, and Measurement

5.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system.

6.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system.

Goal 1.5: Understand Concepts of Form and Function

5.S.1.5.1 Explain how the shape or form of an object or system is frequently related to its use or function.

6.S.1.5.1 Analyze how the shape or form of an object or system is frequently related to its use and/or function.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

5.S.1.6.4 Use evidence to analyze descriptions, explanations, predictions, and models.

5.S.1.6.5 State a hypothesis based on observations.

5.S.1.6.6 Compare alternative explanations and predictions.

6.S.1.6.4 Use evidence to analyze data in order to develop descriptions, explanations, predictions, and models.

6.S.1.6.5 Test a hypothesis based on observations.

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

Standard 2: Physical Science

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interaction

6.S.2.1.5 Explain the nature of physical change and how it relates to physical properties (the distance between molecules as water changes from ice to liquid water, and to water vapor).

Standard 4: Earth and Space Systems

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

5.S.4.1.1 Describe the interactions among the solid earth, oceans and atmosphere (erosion, climate, tectonics and continental drift).

6.S.4.1.1 Explain the interactions among the solid earth, oceans, atmosphere, and organisms.

6.S.4.1.2 Explain the water cycle and its relationship to weather and climate.