Montana Comprehensive Assessment System *(MontCAS, Phase 2)*

Criterion-Referenced Test (CRT)

COMMON CONSTRUCTED-RESPONSE ITEM RELEASE
SCIENCE, GRADE 8

2008

OPI

OFFICE OF PUBLIC INSTRUCTION

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Printed in the United States of America.

Science
Session 1

Write your answer in the space provided for it in your Student Response Booklet.

27. Students want to give weather reports at their school.
    a. List **three** instruments the students could use to describe or predict the weather.
    b. Describe how the students could use these instruments to find out about the weather.

Scoring Guide

Score	Description
4	Response demonstrates comprehensive understanding of simple weather instruments by listing three instruments and describing how the instruments could be used to describe or predict the weather. The response is complete and contains no errors.
3	Response demonstrates general understanding of simple weather instruments by listing three instruments and describing how the instruments could be used to describe or predict the weather. The response is general and/or contains minor errors.
2	Response demonstrates partial understanding of simple weather instruments by listing two instruments and describing how the instruments could be used to describe or predict the weather. The response is partial and contains errors.
1	Response demonstrates minimal understanding of simple weather instruments by listing one instrument and describing how it could be used to describe or predict the weather **OR** listing two or three instruments without describing how the instruments could be used to describe the weather. The response is minimal and contains errors.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Scoring Notes

Instruments could include:

- Thermometer – used to measure air temperature
- Anemometer – used to measure wind speed
- Wind vane – used to determine wind direction
- Hygrometer or wet and dry bulb thermometer – used to determine relative humidity
- Barometer – used to determine air pressure
- Weather balloon – used to attach other instruments to so that weather parameters can be measured in the atmosphere
- Binoculars – used to observe far away phenomena such as smoke rising through the air or being deflected by wind
- Rain gauge – used to determine amount of precipitation

The second part of the item is intended to determine whether the student knows what information the instrument gives. An example would be "I would use a thermometer, barometer, and weather vane so I could determine how warm it is, the air pressure, and the wind direction. This would help me determine what the weather would be."

Score Point 4

Three tools students could use are weather vanes, which they could use to see what way the wind was blowing, thermometers, to tell the temperature, and a rain gauge, so that they could tell how much precipitation there was during a storm.

Score Point 3

If students wanted to give weather reports they could could use a wind-vane to provide wind conditions, a barometer to provide information on the pressure of the air, and a thermometer to provide the temperature of outside.

Score Point 2

(a) rain gage, thermoniter

(B) rain gage to measure rainfal and a thermometer to to see the temperature

Score Point 1

a) 1. thermometer 2. wind sock 3. barometer

b) to check temperature, test wind, and test humidity.

Score Point 0

To predict the weather, they could use...

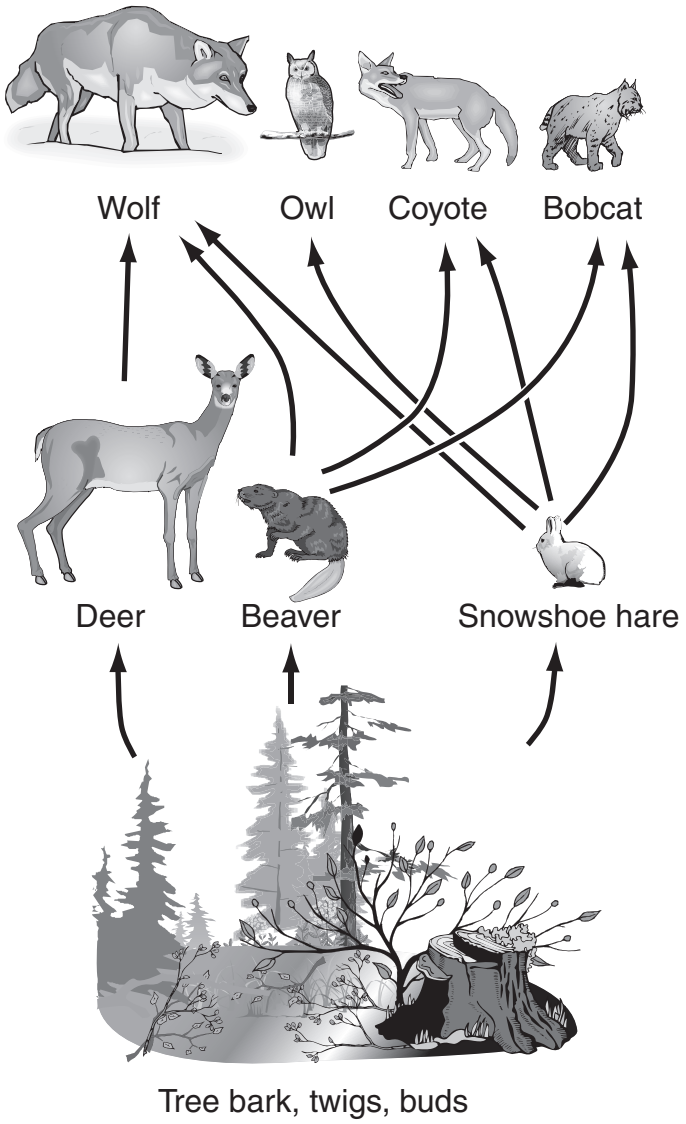
A= • the clouds
• the tempeture
• the sky

B= For the clouds, they could see if it is going to rain or snow. For the temp. they could see if it is going to be cold or warm out. And as for the sky they could predict if it is going to be sunny or cloudy out.

Science
Session 3

Write your answer in the space provided for it in your Student Response Booklet.

81. Study the food web below.



Suppose that the number of deer in this ecosystem decreases significantly one fall. Discuss **three** different effects this decrease might have on other organisms in the food web.

Scoring Guide

Score	Description
4	Student demonstrates a thorough ability to examine food webs and interpret the relationships among the organisms in the food web. Response discusses three different effects a decrease in the number of deer might have. Response contains no errors.
3	Student demonstrates a general ability to examine food webs and interpret the relationships among the organisms in the food web. Response discusses two different effects a decrease in the number of deer might have. Response contains an error or omission.
2	Student demonstrates a limited ability to examine food webs and interpret the relationships among the organisms in the food web. Response discusses one effect a decrease in the number of deer might have or response lists, but does not discuss, three effects. Response contains errors or omissions.
1	Student demonstrates little ability to examine food webs and interpret the relationships among the organisms in the food web. Response lists, but does not discuss, one or two effects a decrease in the number of deer might have. Response is minimal.
0	Response is incorrect or contains some correct work that is irrelevant to the skill or concept being measured.
Blank	No response.

Scoring Notes

Possible effects that a decrease of deer might have on other organisms in the ecosystem include:

- increase in vegetation since the numbers of one of the three animals eating the vegetation has decreased (leaving only the beaver and snowshoe hare to eat the plants)
- decrease in competition between the beaver and snowshoe hare for food since there are fewer deer
- decrease in the number of wolves since a major portion of their prey is missing
- increase in how often the wolf preys on beavers and snowshoe hares since a major part of the wolves' diet (deer) has disappeared
- increase in competition among the wolf, owl, coyote, and bobcat for food since the wolf will now try to prey on the beaver and snowshoe hare

Note that other, more complex effects are possible, but these responses are likely beyond the capabilities of most students at this level.

For a score of 4 or 3, the response must indicate that some of the deer population is still present.

Score Point 4

Three different effects of this decrease will do is frists it will cause a decrease in wolfs because wolf eat mostly deer. Then it will cause a decrease in beaver and hares because wolfs, will be eatting more of then. Then last it will cause a decrease in owls, coyotes, and bobcats because they will have lease to eat.

Score Point 3

wolf would n't have enough to eat so wolf decreces and Beaver and hare increases than owl coyote Bobcat increases from so many Beaver and hare

Score Point 2

1. More vegetation
2. Wolves wont get as much food
3. Wolves will eat more snowshoe hare + beaver.

Score Point 1

The wolf would have to hunt harder for the smaller animals. There might be more trees growing

Score Point 0

Deer = tree

Beaver = water

Snowshoe hare = under ground

Because they live in the forest