

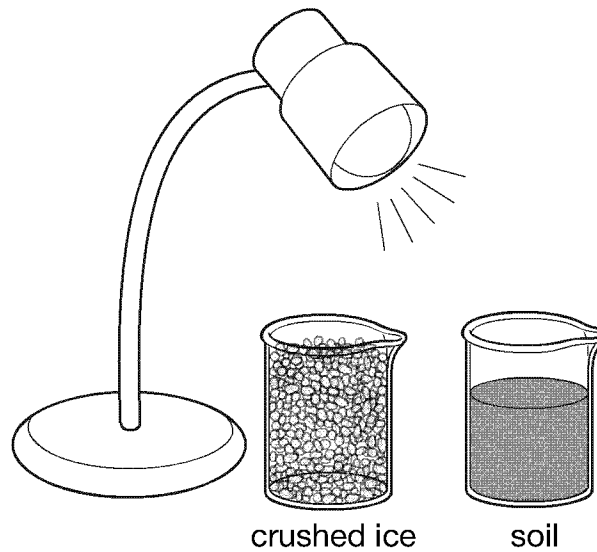
PSSA, Grade 4 Science

Lamp Effects on Ice and Soil

Handscoring Anchor Set

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Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was **most likely** affected by the lamp.

Crushed ice: _____

Soil: _____

Lamp Effects on Ice and Soil Scoring Guide

2	<p>The response demonstrates a <i>thorough</i> understanding of the change to objects caused by temperature change or light by:</p> <ul style="list-style-type: none"> describing how the crushed ice was most likely affected by the lamp AND describing how the soil was most likely affected by the lamp. <p>The response is clear, complete, and correct.</p>
1	<p>The response demonstrates a <i>partial</i> understanding of the change to objects caused by temperature change or light by:</p> <ul style="list-style-type: none"> describing how the crushed ice was most likely affected by the lamp OR describing how the soil was most likely affected by the lamp. <p>The response may contain some work that is incomplete or unclear.</p>
0	<p>The response provides <i>insufficient</i> evidence to demonstrate any understanding of the concept being tested.</p>

Note: No deductions should be taken for misspelled words or grammatical errors.

Responses that will receive credit:

Crushed Ice (1 point):

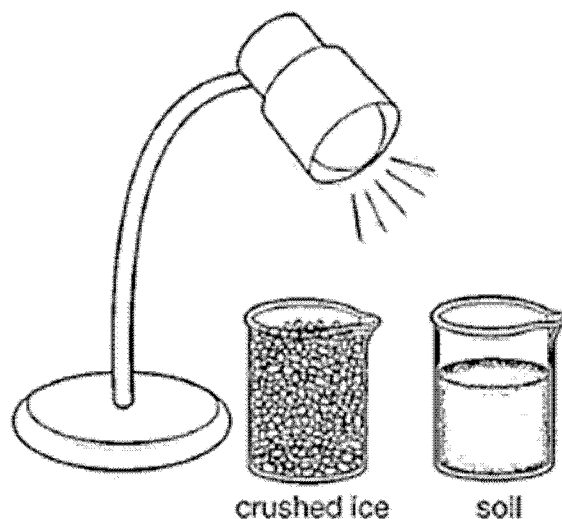
- Some (or all) of the ice melted and changed into a liquid (water).
- The level of the contents in the beaker was decreased.
- Molecules in the ice sped up.
- Energy was added to the ice.

Soil (1 point):

- The soil becomes warmer on top.
- The soil becomes drier on top.
- Energy was added to the soil.

9/15/10

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

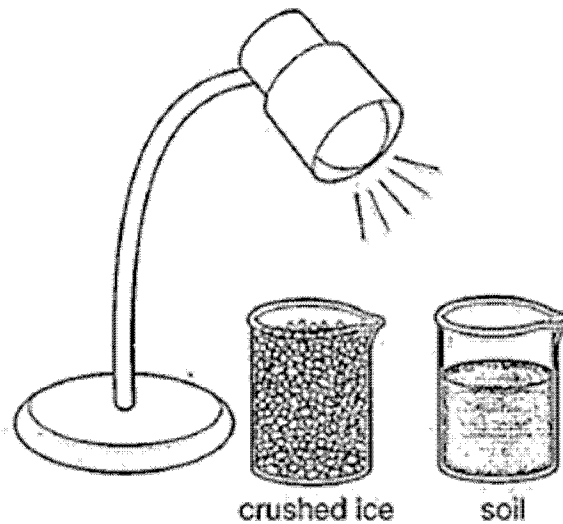
Crushed ice: The crushed ice under the lamp probably melted a little. If you add heat to ice it turns into a liquid; water. If you added more heat it would turn into water vapor, a gas.

Soil: The soil probably wasn't affected as much as the crushed ice. The soil probably just got hot and if it was wet it probably got hard and crunchy.

A-1 Score Point 2

The response demonstrates a thorough understanding of the change to objects caused by temperature change or light by completing both tasks presented in the item. The student states "the crushed ice under the lamp probably melted a little." The additional description contains information that is correct, but not necessary for credit. "The soil probably just got hot" is an acceptable answer for how the soil is affected by the lamp. This response demonstrates clear understanding of the content and receives two points.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

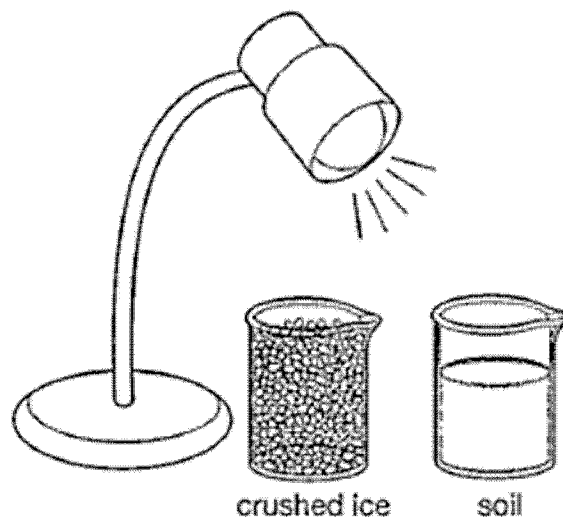
Crushed ice: The Ice probably melted. The light provides heat for, and crushed Ice is cold, so it probably melted.

Soil: It probably got really dry and crusty. Soil needs to keep moist, and with the heat from the light it most likely dried up.

A-2 Score Point 2

The response demonstrates a thorough understanding of the change to objects caused by temperature change or light by completing both tasks presented in the item. The descriptions (*ice probably melted* and *it [soil] probably got really dry and crusty*) represent correct answers to the given prompt. This response is complete and correct.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice:

The crushed ice turned into a liquid called water

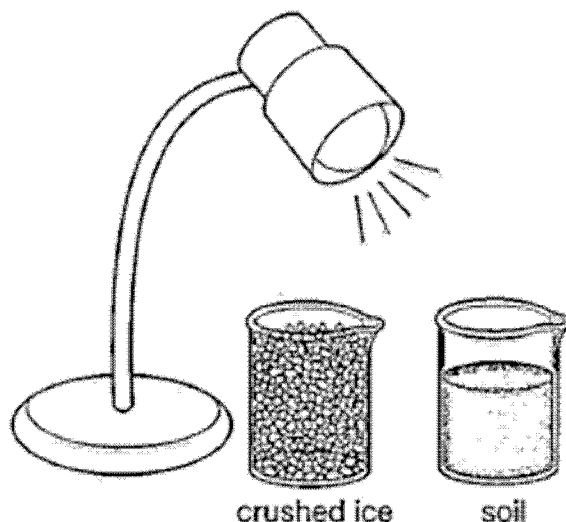
Soil:

The soil may have dried a bit

A-3 Score Point 2

The response demonstrates a thorough understanding of the change to objects caused by temperature change or light by completing both tasks presented in the item. The student correctly states that “the crushed ice turned into a liquid called water” and “the solid may have dried a bit.” The response shows a clear understanding and receives two points.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

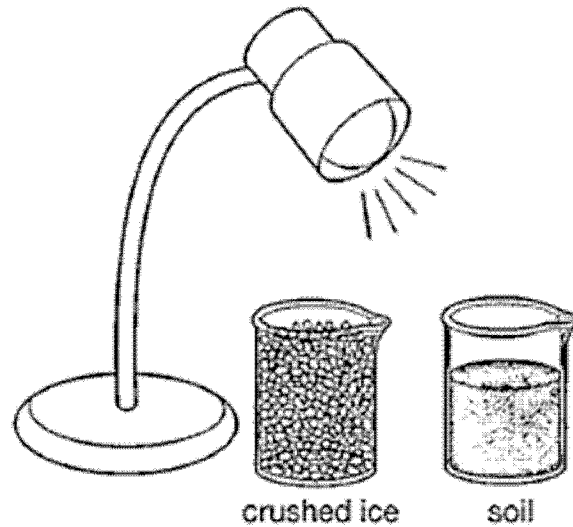
Crushed ice: the ice proble melted a littel from the light and when it warms up and from the heat on the earth

Soil: the soil proble will not do any thing. it will just sit and get a littel warm

A-4 Score Point 2

The response demonstrates a thorough understanding of the change to objects caused by temperature change or light by completing both tasks presented in the item. The student states "the ice proble melted a littel." The discussion about getting heated from the earth does not detract from the correct answer. Additionally, the student describes that "the soil...will just sit and get a littel warm." The first part of the answer (*the soil proble will not do anything*) would not be acceptable, but the continuation of the answer earns credit. This response is complete and receives two points.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

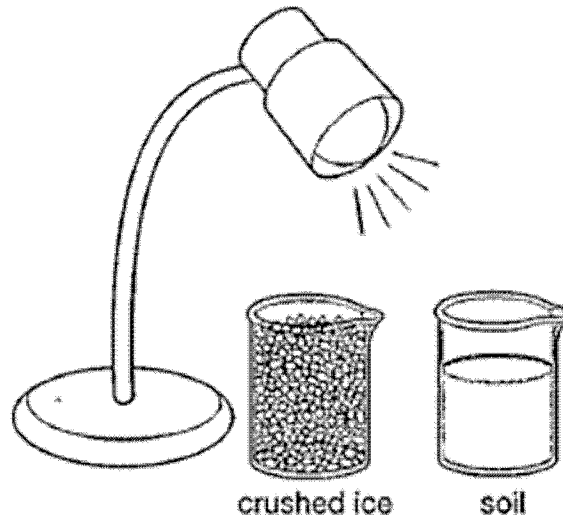
Crushed ice: The crushed ice would turn into water because the lamp is acting like the sun giving off heat to make it melt.

Soil: Nothing would happen to the soil because it can't melt to anything.

A-5 Score Point 1

The response demonstrates a partial understanding of the change to objects caused by temperature change or light by completing one of the tasks presented in the item. The description of the how the ice is affected by the lamp (*the crushed ice would turn into water or make it melt*) is acceptable. The statement that "nothing would happen to the soil because it can't melt to anything" is not an acceptable response. There is no additional credit for this response. This response contains an incomplete answer and receives one point.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

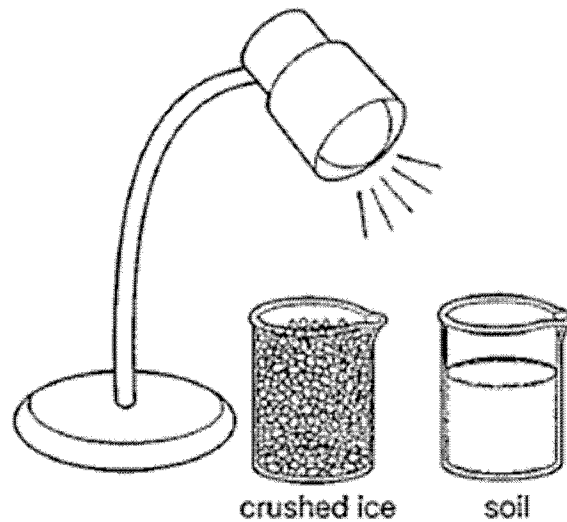
Crushed ice: *was big ice when it sat for ten minutes all of it went into little ice cubes and it was melting*

Soil: *the soil turned all gwey like a drink it was very warm*

A-6 Score Point 1

The response demonstrates a partial understanding of the change to objects caused by temperature change or light by completing one of the tasks presented in the item. The description that "[the ice] was melting" is acceptable. The description of how the soil is affected by the lamp is unclear. "The soil turned all gwey like a drink" is unclear. Even though the student continues to say "it was very warm," the first statement detracts from the answer. This response contains work that is unclear and demonstrates a partial understanding.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

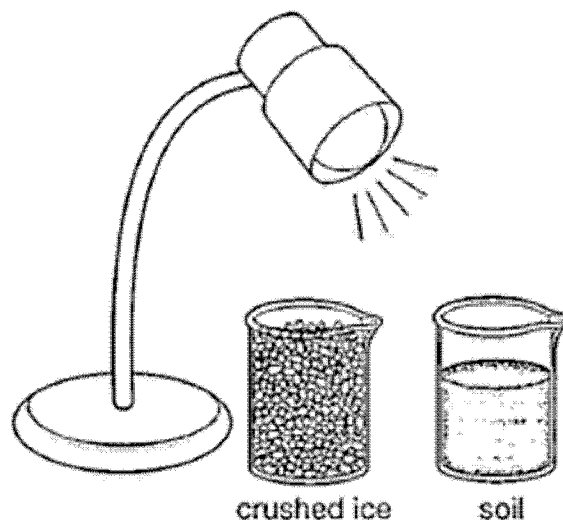
Crushed ice: it will melt

Soil: it won't melt.

A-7 Score Point 1

The response demonstrates a partial understanding of the change to objects caused by temperature change or light by completing one of the tasks presented in the item. This response states that "[the ice] will melt" and "[the soil] won't melt." The description of how the crushed ice is affected by the lamp is acceptable. The student does not receive credit for the description of how the soil is affected by the lamp. They must describe what happens to the soil and cannot get credit for describing something that does not happen. This response is incomplete and receives one point.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

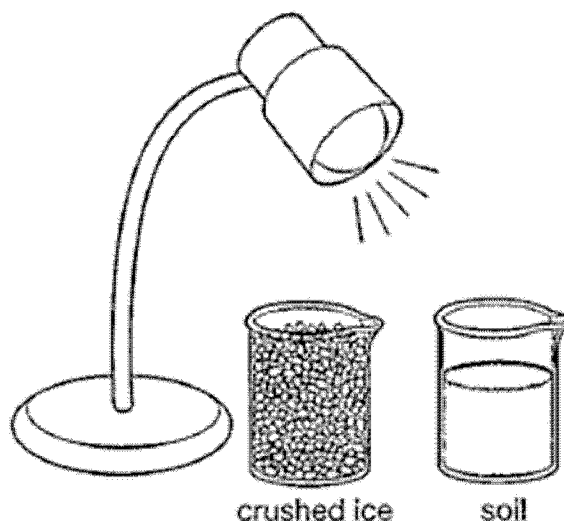
Crushed ice: The crushed ice will mostly be like, after the ten minutes is up for the crushed ice it will turn into water. That's called melting into a liquid.

Soil: What I think will happen to the soil. After the ten minutes the soil will be all mushy. The it will be ready to be plant.

A-8 Score Point 1

The response demonstrates a partial understanding of the change to objects caused by temperature change or light by completing one of the tasks presented in the item. The student provides an accurate description of how the crushed ice was affected by the lamp (*it will turn into water or called melting into a liquid*). The description of how the soil was affected is unclear. "The soil will be all mushy" is not a clear change to the soil. This response contains work that is unclear and receives partial credit.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

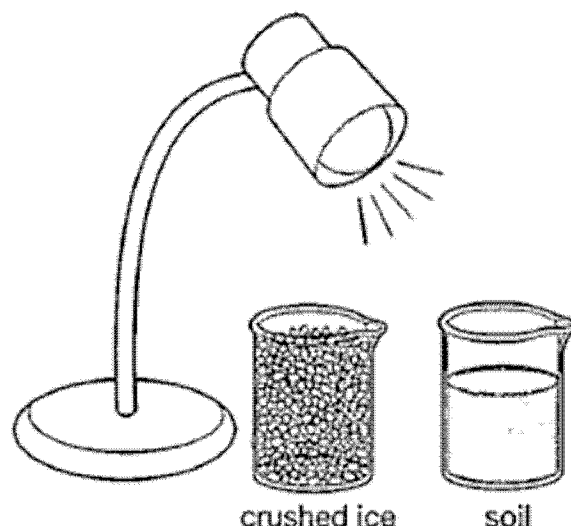
Crushed ice: When the student put the crushed ice under for 10 minutes. But at the start it was full. Then a little of it was gone.

Soil: When the students put the soil under for 10 minutes. But at the start there was a lot. Then when it was done half of it was gone.

A-9 Score Point 0

The response demonstrates insufficient understanding of the change to objects caused by temperature change or light by completing none of the tasks presented in the item. The response does not represent a correct answer. Stating that "a little of it was gone" seems to attempt to describe evaporation, but is not clear enough for credit. The description of how the soil was affected makes it clear the student does not have a good understanding of the content. This response contains no work that is acceptable for credit.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice was probably more affected than the soil because soil is out in sun all day and crushed ice is inside all day and is kept cold, and as I said in question 73, lamps have heat energy.

Soil: The soil was probably less affected than the crushed ice because soil is usually under crops and out in sun all day and crushed ice is usually spent inside in a freezer all day long.

A-10 Score Point 0

The response demonstrates insufficient understanding of the change to objects caused by temperature change or light by completing none of the tasks presented in the item. Both of the descriptions are not acceptable for credit. The student's answer does contain some information that is correct, but never provides an answer to the questions presented. The descriptions attempt to say why each object was affected, but never state how. This student response receives no credit for the information given.

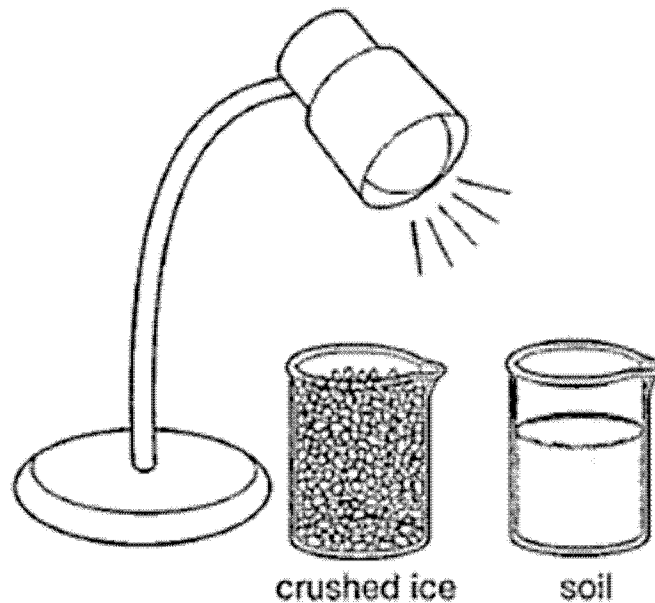
PSSA, Grade 4 Science

Lamp Effects on Ice and Soil

Handscoring Training Set 1

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Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

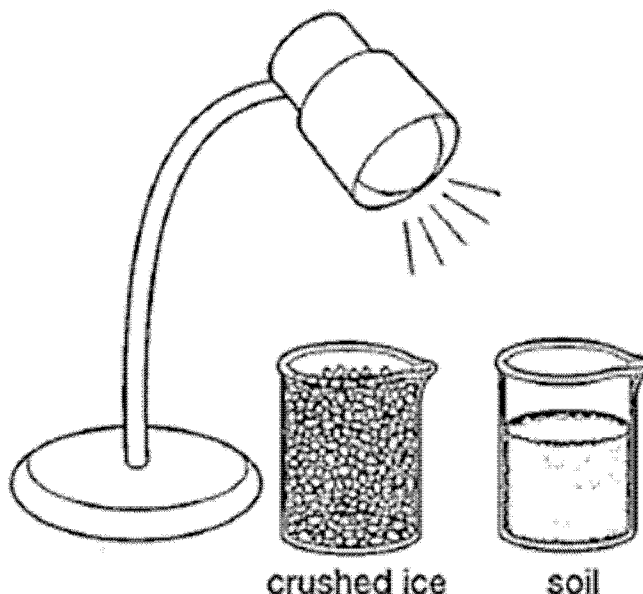
Crushed ice:

The ice will be affected because it will become water also a liquid.

Soil:

The soil wasn't affected because the soil didn't change.

Use the drawings below to answer question

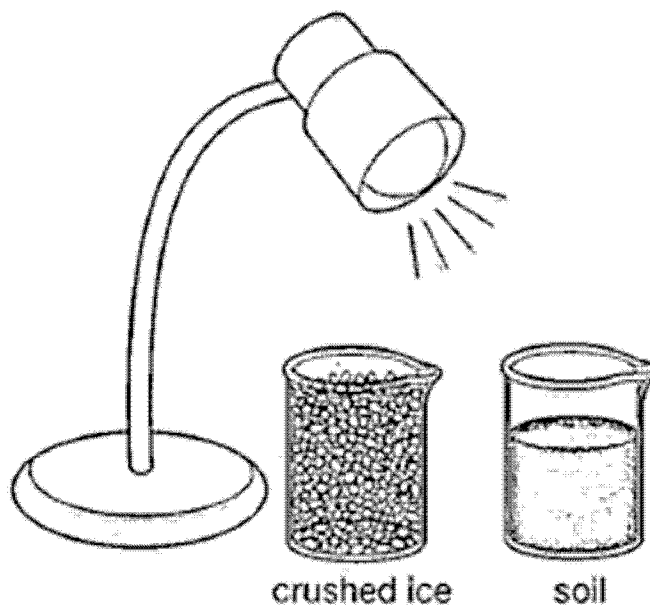


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: You have to crush the ice lamp of the 10 minutes two objects is the same but you have to each.

Soil: The soil is brown like you have to soil the plants water it is the different.

Use the drawings below to answer question

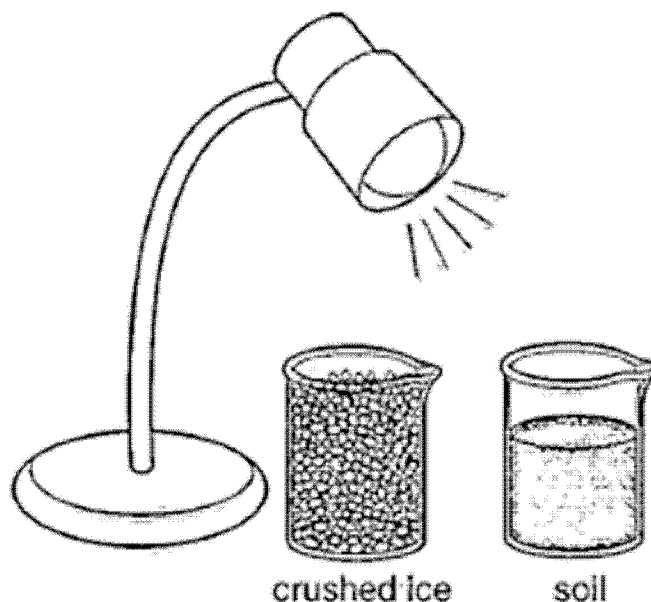


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: the crushed ice will melt
into water

Soil: The soil will not melt
at all.

Use the drawings below to answer question

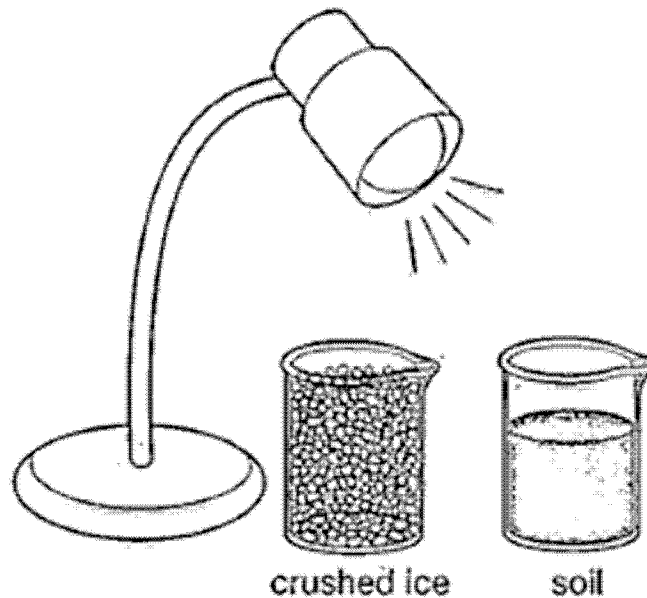


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: It probably melted.

Soil: The soil gets more hot and if there is any water in it it will evaporate.

Use the drawings below to answer question

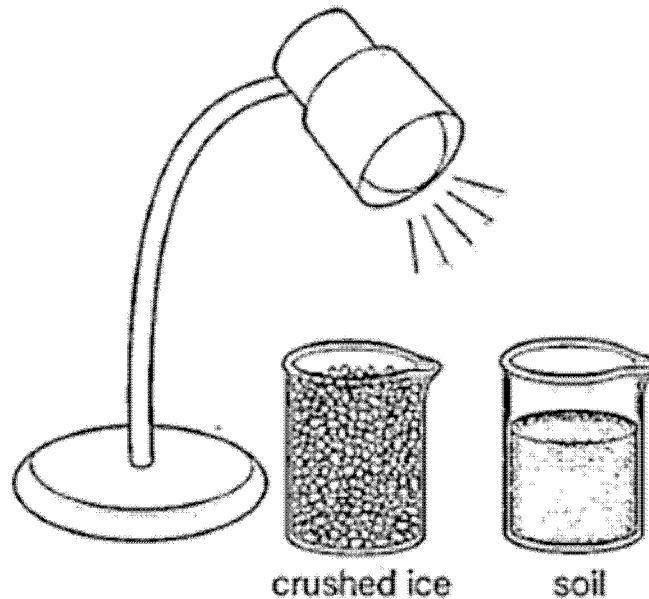


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice turned into water
after ten minutes.

Soil: The soil didn't change; it stayed
a solid.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

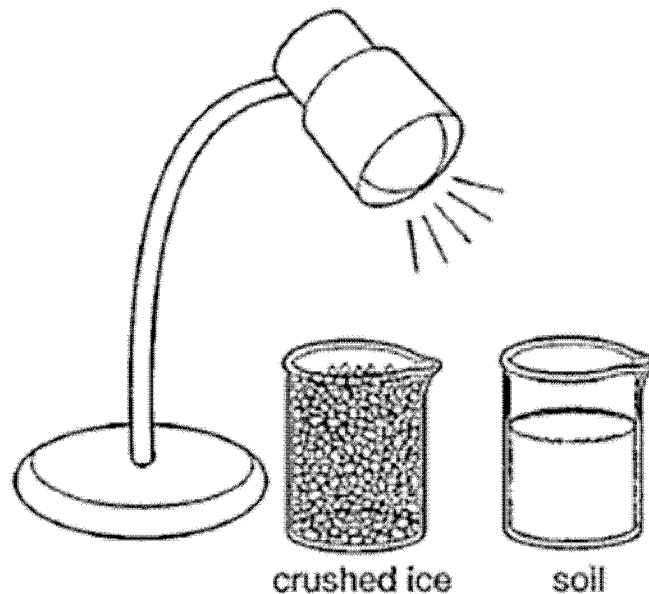
Crushed ice:

The lamp would cause the ice to melt and turn to water.

Soil:

The lamp would cause the soil to dry out and become hard.

Use the drawings below to answer question

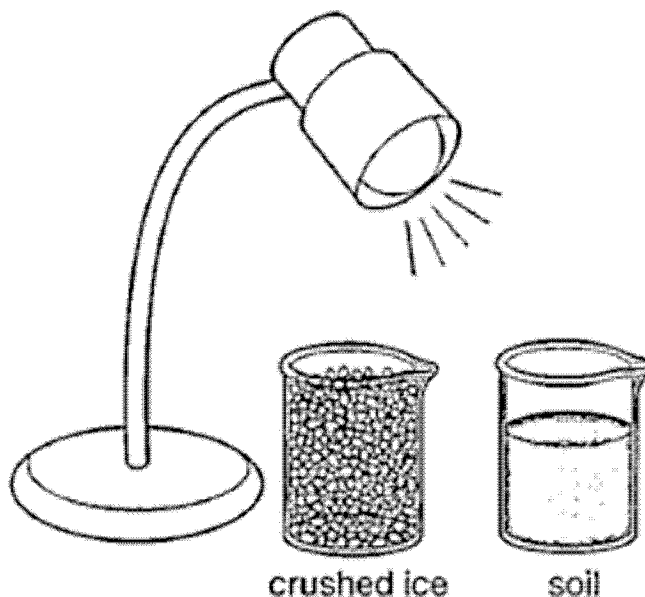


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: This object is most likely to melt because as the lamp heats up the ice will melt so the ice would be turned into a liquid that is how I figured this out the problem.

Soil: This object would most likely to melt or stay the same because if the solid was a ice cube it would melt if it was a rock it would not melt and that is my answer.

Use the drawings below to answer question

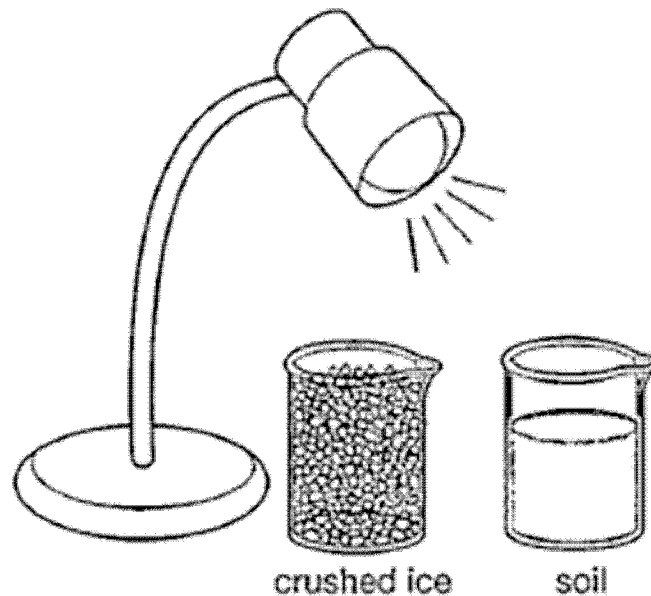


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice looks like rocks and the bright lamp turn it into rocks.

Soil: The soil looks like water and also it turn into water.

Use the drawings below to answer question

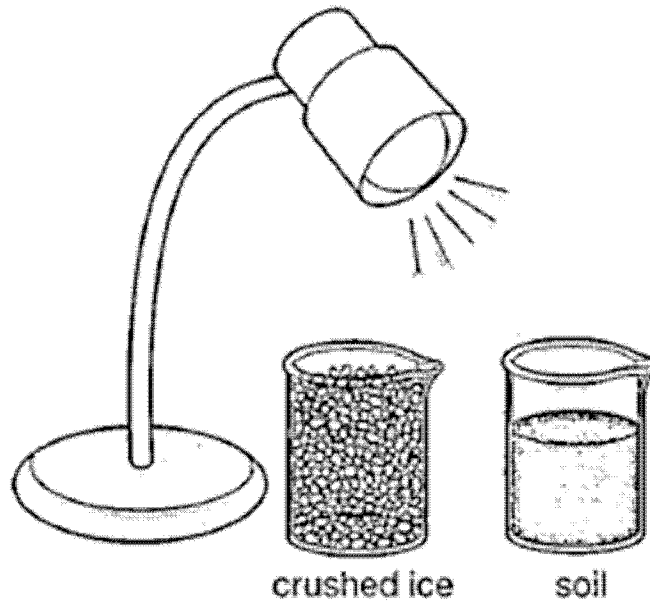


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice was affected by the lamp because the crushed ice melted, evaporated, and was turned into water, vapor. So, the crushed ice was turned from a solid to a gas.

Soil: The soil was affected because the soil took nutrients from the light of the lamp and gained more nutrients.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: the crushed ice did not melt

Soil: The soil stayed the same

PSSA Science: Lamp Effects on Ice and Soil (Grade 4); Training Set One

Subject: **Science**

Item: **Lamp Effects on Ice and Soil**

Grade 4

Name _____

Number	Score	Notes
T1-1		
T1-2		
T1-3		
T1-4		
T1-5		
T1-6		
T1-7		
T1-8		
T1-9		
T1-10		

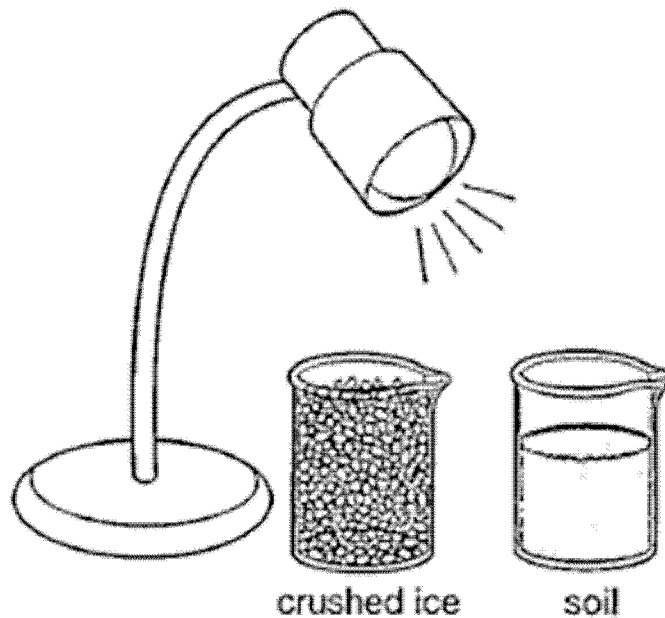
PSSA, Grade 4 Science

Lamp Effects on Ice and Soil

Handscoring Training Set 2

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Use the drawings below to answer question

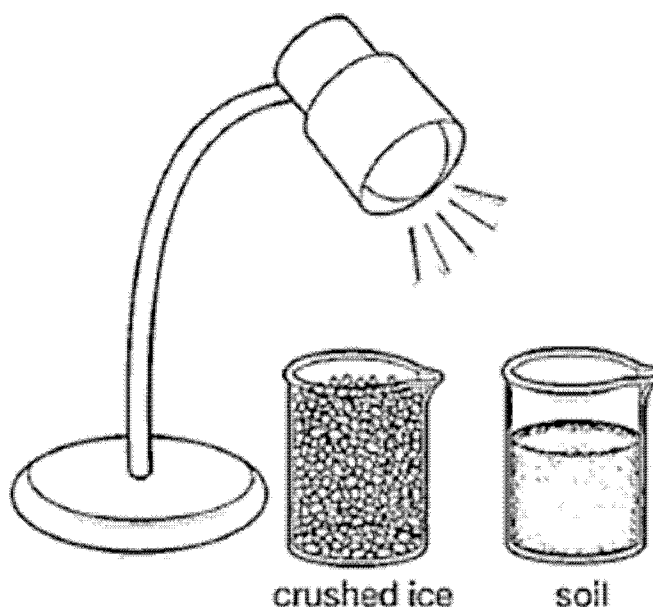


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: Soil

Soil: crushed ice.

Use the drawings below to answer question

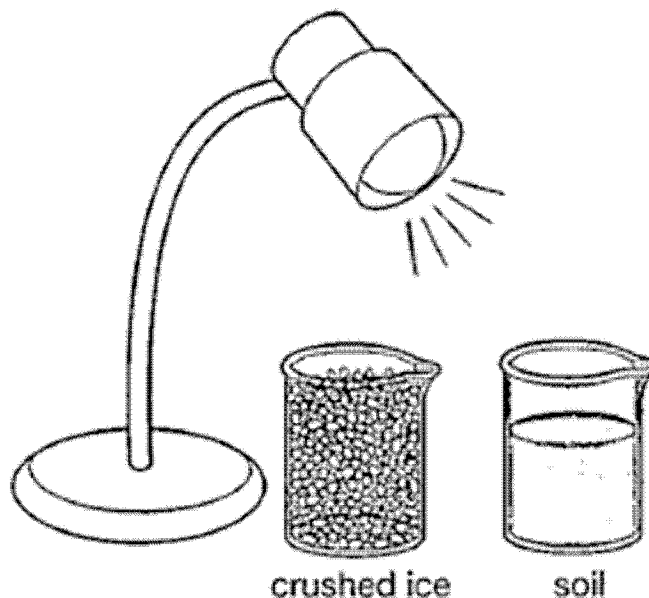


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice would turn to water because it's so hot.

Soil: The soil would start to smoke because of how hot the lamp is.

Use the drawings below to answer question

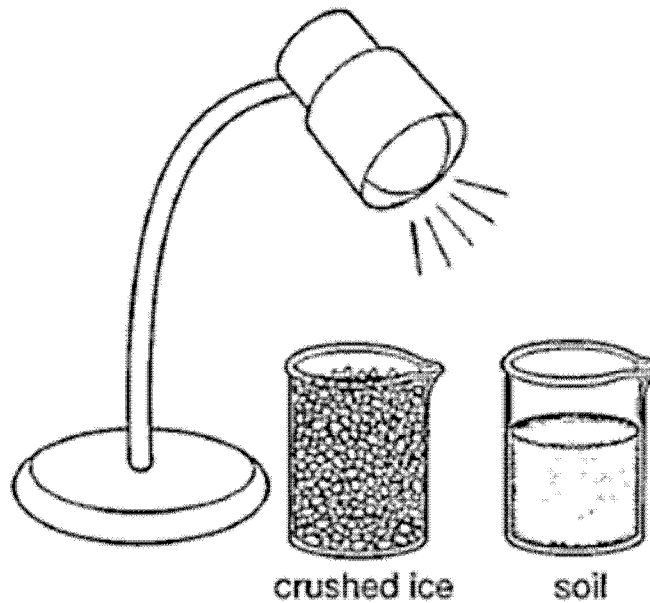


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: It would melt cause of the heat.

Soil: It would have a cause of the heat

Use the drawings below to answer question

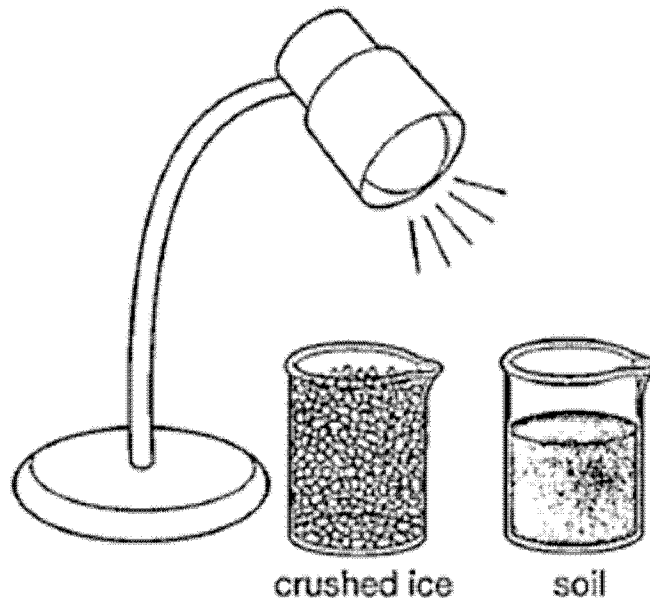


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The ice will directly
turn into liquid.

Soil: The soil will get softer and
softer.

Use the drawings below to answer question

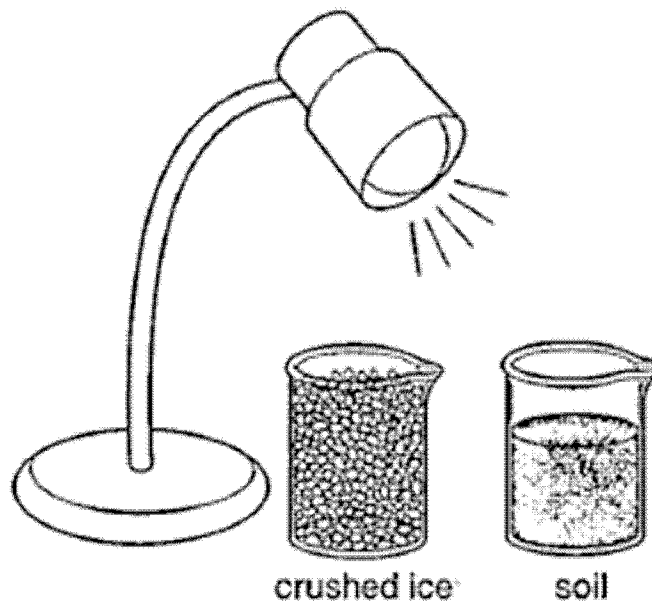


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: If the crushed ice is going to melt in to water I think this because when ice is put under light (heat, warmth) it goes in to water.

Soil: If you put the soil under the light it will dry up and not be as damp.

Use the drawings below to answer question



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

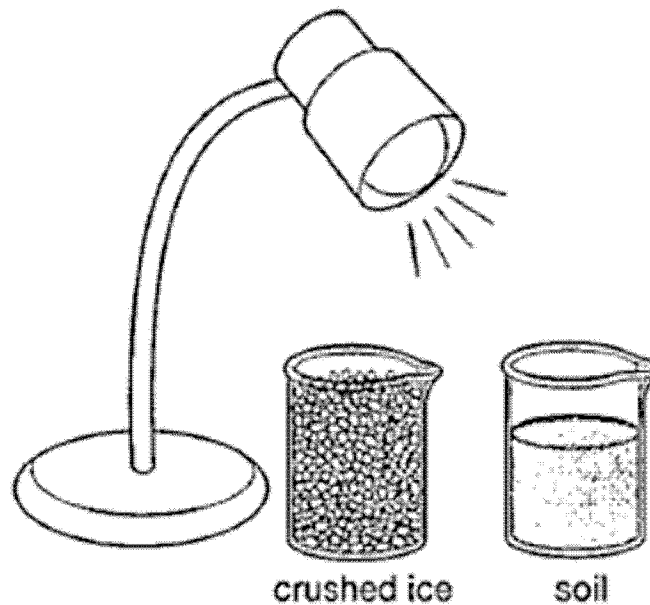
Crushed ice:

The crushed ice will most likely melt because the light is like the sun.

Soil:

The soil will most likely stay the same unless it has water and seeds in it. Then it will grow a flower.

Use the drawings below to answer question

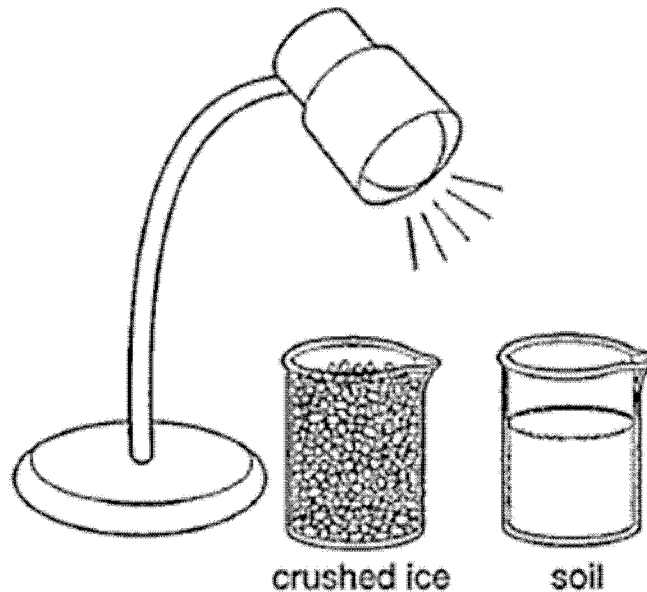


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice looks like eggs, and like beads, ants.

Soil: The soil is having friction on it, and it looks like sand.

Use the drawings below to answer question

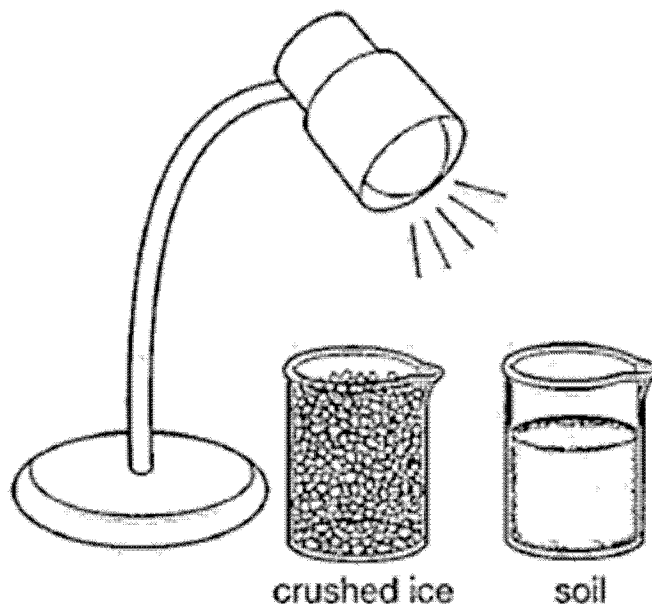


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: it would melt into water and it would get
liquidy and it won't be cold it would be warm.

Soil: it would melt and be like lickedy mud and
you could use it to plant a garden.

Use the drawings below to answer question

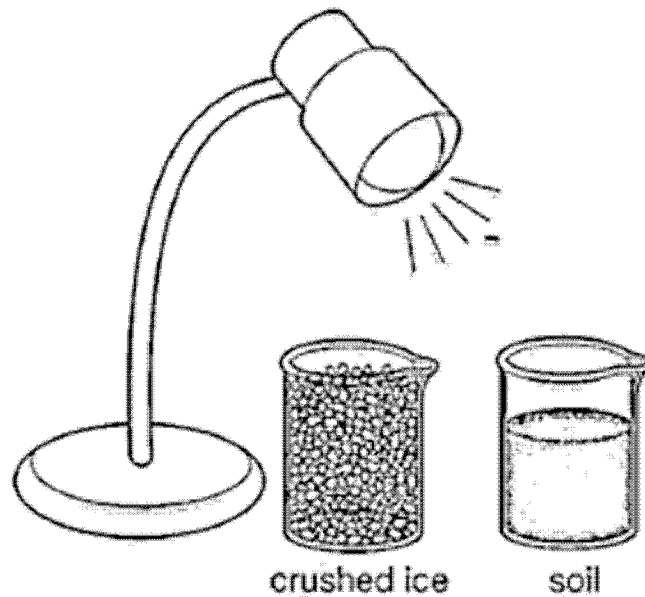


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: Of course crushed ice is gonna be affected by the lamp

Soil: The soil will not get affected by the lamp.

Use the drawings below to answer question.



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice would have started to melt in the container because of the heat coming from the lamp.

Soil: The soil would have gotten hot in the container its in because of the heat that is coming from the lamp.

PSSA Science: Lamp Effects on Ice and Soil (Grade 4); Training Set Two

Subject: **Science**

Item: **Lamp Effects on Ice and Soil**

Grade 4

Name _____

Number	Score	Notes
T2-1		
T2-2		
T2-3		
T2-4		
T2-5		
T2-6		
T2-7		
T2-8		
T2-9		
T2-10		

PSSA, Grade 4 Science

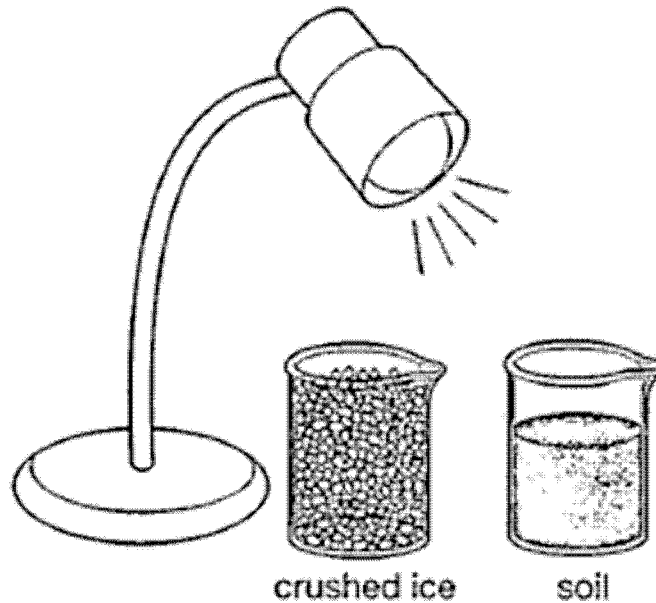
Lamp Effects on Ice and Soil

Handscoring Practice Set*

*Responses in this set do not have true scores. Apply scores based on scoring criteria.

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Use the drawings below to answer question

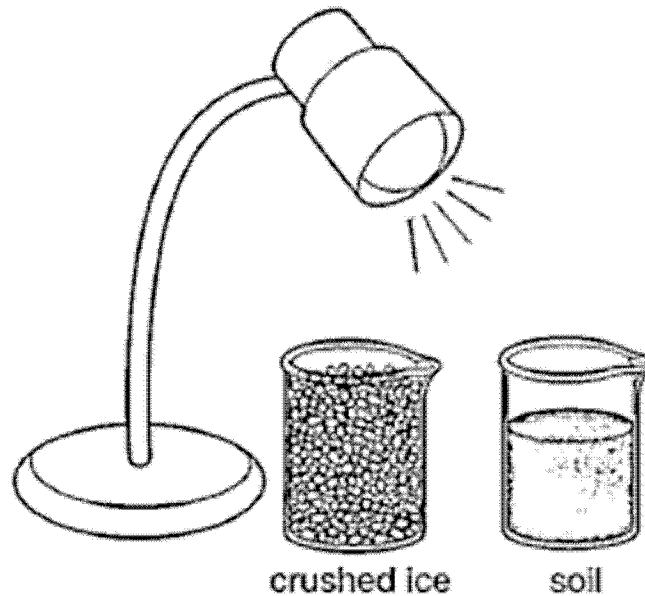


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The lamp is crushed ice in 10 minutes.

Soil: The soil is the point.

Use the drawings below to answer question

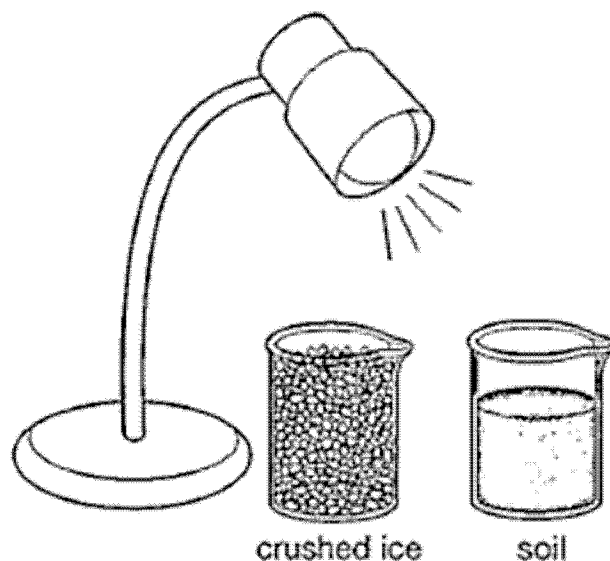


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: will most likely turn from a solid to a liquid or in other words melt.

Soil: will most likely stay the same just get a little warm

Use the drawings below to answer question

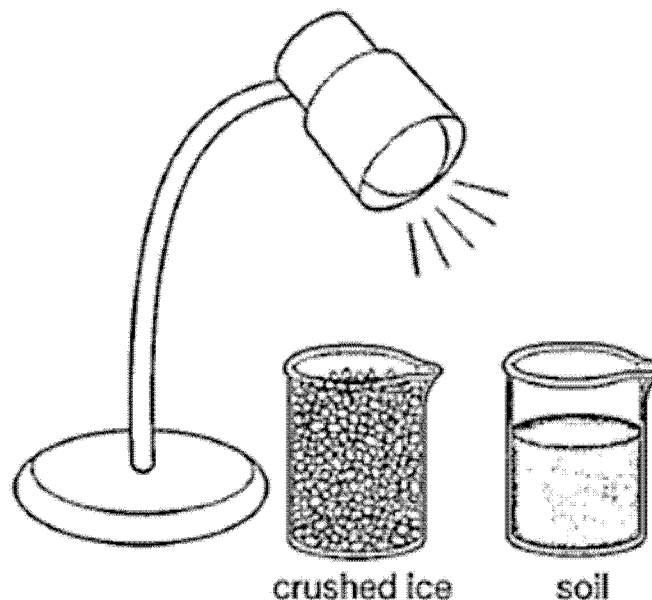


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: it might melt because the heat coming from the lamp will melt the ice.

Soil: it has the light shining on the soil so, the soil is getting light from the lamp the soil will get light and if you put it in the ground with water it will grow a plant.

Use the drawings below to answer question

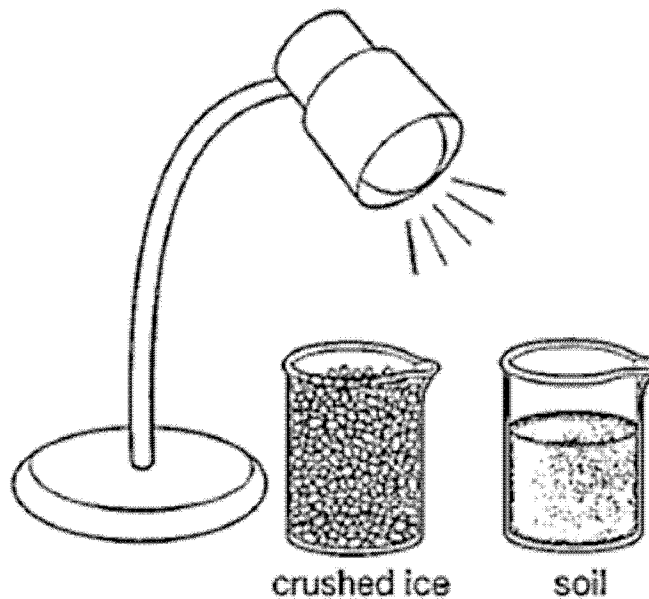


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice will most likely to melt. It will melt because ice melts all the time. If it melts, it will become water to drink. The student could drink it or throw it out.

Soil: The light will do nothing to the soil. It will just make the soil warm and mushy. The soil would be good for farming or playing with or throwing it out.

Use the drawings below to answer question

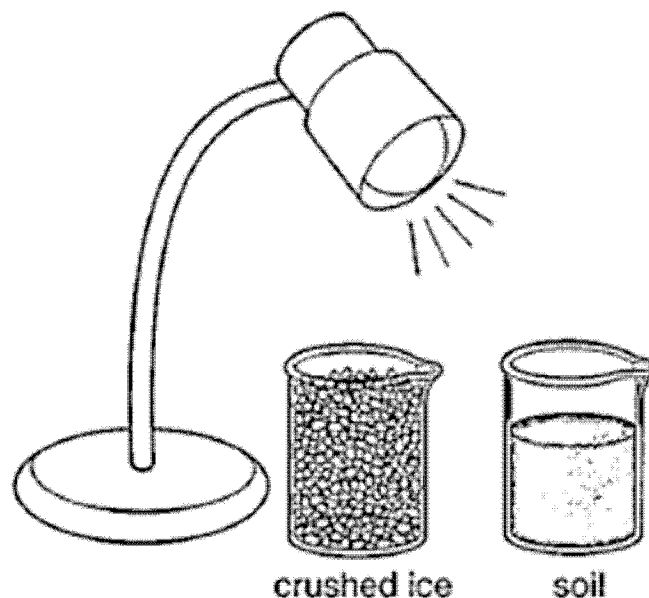


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: It would melt

Soil: I would melt.

Use the drawings below to answer question

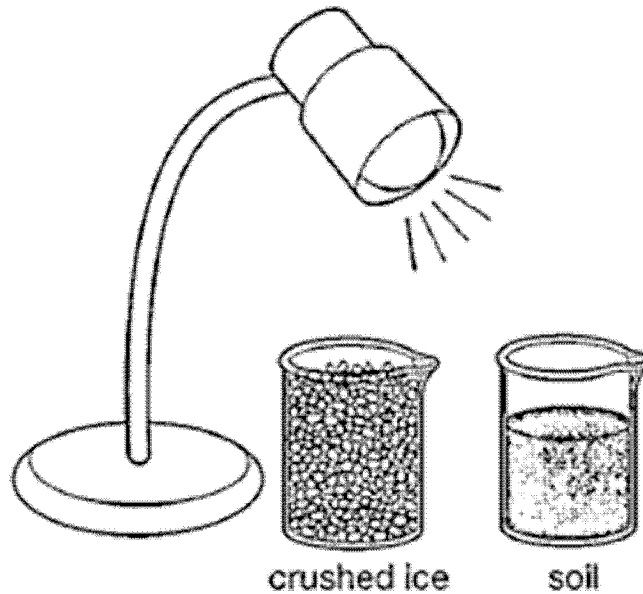


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: The crushed ice was affected
because it is nothing but frozen water
crushed up in a cup so it would
melt and turn in to a liquid.

Soil: it probally become hard because
it is drying up and if you take
it out it may feel like a brick
because it dried.

Use the drawings below to answer question

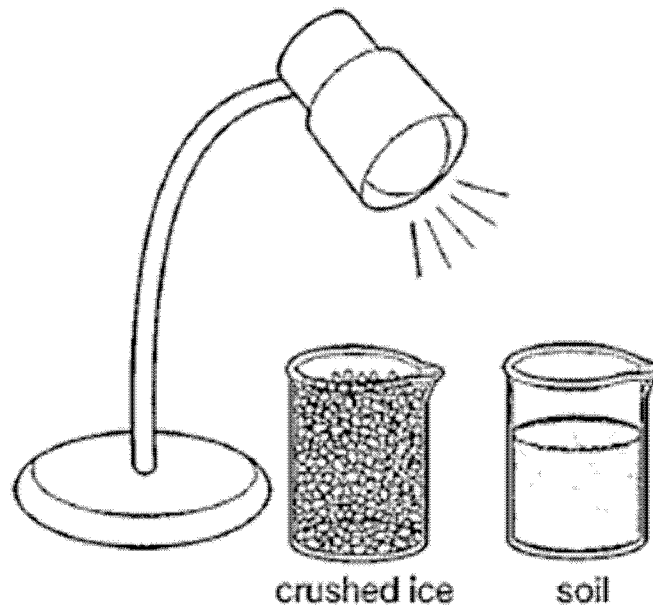


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: the crushed ice will
melt into a liquid

Soil: It won't change

Use the drawings below to answer question

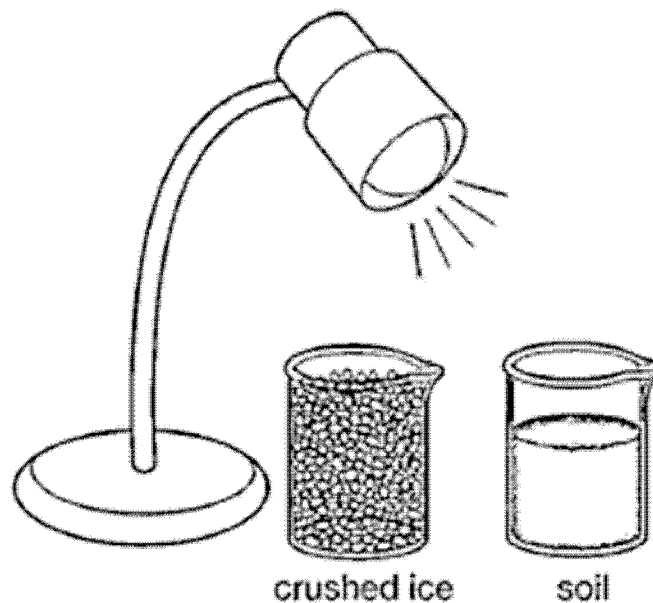


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: Crushed ice is a material you
leave it under a lamp for 10 mins

Soil: Soil is for plants to help
them grow and to help a lot
them grow

Use the drawings below to answer question

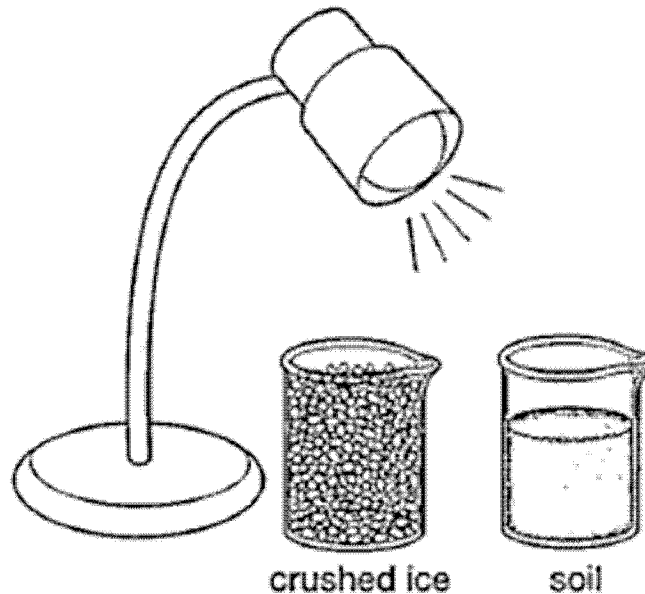


A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: probably melted

Soil: warmed up

Use the drawings below to answer question:



A student placed these two objects directly beneath a lamp for 10 minutes. Describe how each object was most likely affected by the lamp.

Crushed ice: Crushed ice was most likely
affected by the lamp because
the crushed ice would get smaller
if it is just sitting there for
10 minutes.

Soil: soil was most likely affected
by the lamp because the soil
will get all wet and mushy if it
is under a lamp for 10 minutes.

Practice Set*

Subject: **Science**Item: **Lamp Effects on Ice and Soil**

Grade 4

Name _____

Number	Score	Consensus	Annotation
P-1			
P-2			
P-3			
P-4			
P-5			
P-6			
P-7			
P-8			
P-9			
P-10			

***Responses in this set do not have true scores. Apply scores based on scoring criteria.**

PSSA, Grade 4 Science

Lamp Effects on Ice and Soil

Handscoring
Training Sets 1 and 2
True Scores/Annotations

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Paper	Score	Comments
T1-1	1	Crushed ice: Correct response: '...will become water also a liquid.' Soil: No credit
T1-2	0	Crushed ice: No credit Soil: No credit
T1-3	1	Crushed ice: Correct response: '...melt into water' Soil: No credit – 'will not melt at all'
T1-4	2	Crushed ice: Correct response: 'It will probaly melted' Soil: Correct response: '...gets more hot...'
T1-5	1	Crushed ice: Correct response: '...turned into water...' Soil: No credit
T1-6	2	Crushed ice: Correct response: '...melt...' Soil: Correct response: '...dry out...'
T1-7	1	Crushed ice: Correct response: '...to melt...' Soil: No credit
T1-8	0	Crushed ice: No credit Soil: No credit
T1-9	1	Crushed ice: Acceptable response – the student includes melting and evaporation – both stages are given – student cannot get credit for solid to gas without saying the ice melted first Soil: No credit – 'took nutrince from the light' is not acceptable
T1-10	0	Crushed ice: No credit – 'did not melt' is not acceptable Soil: No credit

Paper	Score	Comments
T2-1	0	Crushed ice: No credit Soil: No credit
T2-2	1	Crushed ice: Correct response: '...turn into water...' Soil: No credit – implying that the soil will burn is not correct
T2-3	2	Crushed ice: Correct response: '...melt...' Soil: Correct response: '...harden cause of the heat'
T2-4	1	Crushed ice: Correct response: '...turn into a liquid.' Soil: No credit – 'softer' is not a defined affect the lamp would have on the soil
T2-5	2	Crushed ice: Correct response: '...goes into water.' Soil: '...dry up...'
T2-6	1	Crushed ice: Correct response: '...melt...' Soil: No credit – growing a flower is not acceptable
T2-7	0	Crushed ice: No credit Soil: No credit
T2-8	1	Crushed ice: Correct response: '...melt...' Soil: No credit – the soil will not melt
T2-9	0	Crushed ice: No credit Soil: No credit
T2-10	2	Crushed ice: Correct response: '...melt...' Soil: Correct response: '...gotten hot...'

PSSA, Grade 4 Science

Handscoring Nonscorable Codes

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PENNSYLVANIA NONSCORABLE CODES

For PSSA Reading, Science, and Mathematics and all Keystone Open-ended Items (items with zero as a valid score point):

Nonscoreable Code	Definition/Example/Notes
B – Blank	<p>Completely blank response. This includes responses that:</p> <ul style="list-style-type: none"> • Are completely erased (so that words are unreadable) • Are completely crossed out (so that words are unreadable) • Online responses that consist solely of “white space” (e.g., spaces, tabs, returns)
R – Refusal	<p>Response indicates a refusal to attempt the task. This includes:</p> <ul style="list-style-type: none"> • <i>I don’t care; I’m not taking this test; This is stupid; I won’t do it; you can’t make me answer this question</i> • <i>I don’t know; IDK; we never learned this; X; NA</i> • <i>Unrelated song lyrics/rap lyrics/poetry (e.g., the lyrics to Hotel California in answer to a writing prompt asking whether backpacks should be allowed in class)</i> • <i>Intentionally off-task response (e.g., a detailed description of what the student ate for breakfast that morning in answer to a question about Mozart’s childhood)</i> <p>This also includes responses that consist solely of scribbles, random keystrokes (yyyyyyy, av:aeoiahvb;e, hhrttuuvv), indecipherable writing/keystrokes (swensts mengetstets arawnstets) emoticons, stray marks, doodles, drawings, circles, underlines, a couple of random letters (not a word), copying the question and/or test directions, or other evidence that no attempt was made to address the task.</p>
K – Off task/topic	<p>Response makes no reference to the item or (if applicable) the passage provided, but does not seem to constitute an intentional refusal.</p> <p>If any part of the response relates to the item in any way, score the response.</p>
F – Foreign Language	<p>Responses written entirely in a language other than English.</p> <p>Note that mathematics responses may still be scoreable if they also contain mathematical language (numbers, operators, etc.) that can be assessed by the rubric.</p> <p>Also note that a Spanish language version of the test is available for students for mathematics and science assessments. These are scored by qualified Spanish-speaking scorers.</p>
U – Illegible	<p>This category includes:</p> <ul style="list-style-type: none"> • Responses that are completely illegible due to poor handwriting.* • Online or typed responses that are incoherent due to consisting of random strings of words that are not clearly a Refusal or Off Topic (e.g., <i>best day school teacher inspired so I rode my car</i>) <p>* If a response is difficult to read, every effort is made to read the response. Multiple people, including a Team Leader and/or a Scoring Director, will attempt to decipher the response, and the original answer document will be reviewed if necessary. If, ultimately, only a portion of the response is legible, that verbiage will be scored on its own merits.</p>

Note: In reading, copied irrelevant text receives a score of 0.

Note: Responses that consist of a couple of words and do not represent a complete thought (e.g., *I think that, Ramps are*) receive a score of 0.

Note: Crossed out, but legible/partially legible, responses are scored according to the rubric based on whatever verbiage is legible.