LOUISIANA DEPARTMENT OF EDUCATION

Office of Assessments, Analytics, and Accountability

LEAP Released Item Guide for Science Grade 3

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Purpose

The LEAP released item guide is intended to be used as an instructional tool and not to predict performance on the summative test. These items are meant to help teachers better understand how the achievement level descriptors are used in creating assessment questions.

How to Use and Not Use

The recommendations and cautions that follow are meant to help teachers better understand the achievement level descriptors and help administrators better understand what should and should not be done with the released items.

How to Use

- Learn how achievement level descriptors work with the dimensions in an item;
- Provide guidance when selecting assessment items in terms of rigor, content, and item types

How Not to Use

- Avoid prioritizing the PEs used in the released items because they do not represent all of the content eligible for the operational test;
- Avoid limiting instructional strategies to the released items (creating instructional sets using only the PEs found in the document);
- Do not use only the stimulus materials provided in the released items for classroom instruction;
- Avoid creating assessment items that mirror the released items;
- Avoid designing instructional tasks and sets based on only one PE.

Assessment Design

Supporting Science Instruction

The LEAP tests will assess students' understanding of the LSS for Science, reflecting the multiple dimensions of the standards.

Apply content knowledge and skills (Disciplinary Core Idea, DCI)

On the LEAP test, students answer questions which require content knowledge and skills aligned to PE bundles (groupings of PEs) and the corresponding DCIs.

Investigate, evaluate, and reason scientifically (Science and Engineering Practice, SEP)

On the LEAP test, students do more than answer recall questions about science; they apply the practices, or behaviors, of scientists and engineers to investigate each real-world phenomenon and design solutions to problems.

Connect ideas across disciplines (Crosscutting Concept, CCC)

On the LEAP test, sets of questions assess student application of knowledge across the domains of science for a comprehensive picture of student readiness for their next grade or course in science.

Set Based Design

The grade 3 tests include item sets and standalone items.

Item Sets

Item sets consist of four items that have a common stimulus. There are two one-point items and two two-point items in each item set on the LEAP test. For three of the item sets, one of the two-point items will be a Constructed Response item. In the released item sets, there may be more than four items or fewer than four items with a common stimulus.

Standalone Items

Standalone items are one-point or two-point items that do not share a stimulus with other items.

Achievement-Level Definitions

Achievement-level definitions briefly describe the expectations for student performance at each of Louisiana's five achievement levels:

- Advanced: Students performing at this level have **exceeded** college and career readiness expectations and are well prepared for the next level of study in this content area.
- Mastery: Students performing at this level have **met** college and career readiness expectations and are prepared for the next level of study in this content area.
- Basic: Students performing at this level have **nearly met** college and career readiness expectations and may need additional support to be fully prepared for the next level of study in this content area.
- Approaching Basic: Students performing at this level have **partially met** college and career readiness expectations and will need much support to be prepared for the next level of study in this content area.
- Unsatisfactory: Students performing at this level have **not yet met** the college and career readiness expectations and will need extensive support to be prepared for the next level of study in this content area.

Achievement Level Descriptors

Achievement Level Descriptors (ALDs) indicate what a typical student at each level should be able to demonstrate based on his or her command of grade-level standards. ALDs are written for the three assessment reporting categories. Access the ALDs on the Assessment Resources Webpage for a breakdown of the knowledge, skills, and practices associated with each achievement level.

Released Items

This section includes released test items. With each item and item set, is a table containing alignment information and the answer key, where possible. Additionally, analyses of the multi-dimensional alignment, achievement level descriptor, rationales for answers, and rubrics for CRs are included with the items. An asterisk (*) denotes correct answer(s).

The achievement level descriptor provides information about how students who answer the item correctly are performing.

For example, an item is aligned to the SEP and DCI for 3-PS2-4:

Performance Expectation	Level 5: Advanced	Level 4: Mastery	Level 3: Basic	Level 2: Approaching Basic
3-PS2-4 Define a simple design problem that can be solved by applying scientific ideas about magnets. CCC: PAT SEP: 1	Revise a simple design problem that can be solved by applying scientific ideas about magnets.	Define a simple design problem that can be solved by applying scientific ideas about magnets.	Identify variables in a simple problem that can be solved by applying scientific ideas about magnets.	Identify the characteristics of magnets.

Identifies the performance level of students who answer the question correctly.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 3 or higher. The student can identify the variables in a simple problem that can be solved with magnets.

Identifies how the item aligns to the dimensions.

Which question is best for Marci to investigate using this setup?

A. Which arrangements of magnets will push the gate away from the fence and prevent it from closing?*

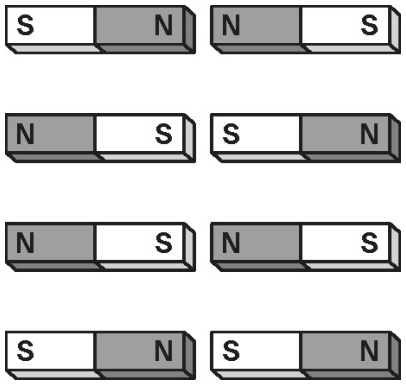
Released Items:
Standalone Items
Item Set: Salmon and River Dams
Item Set: Forces and Cabinet Doors

Standalone Items

Item Type	PE	DCI	SEP	CCC	Points	Achievement Level
MC	3-PS2-4	UE.PS2B.b	1. Q/P		1	3
MS	3-ESS2-1	UE.ESS2D.a	4. DATA	PAT	1	5
TPD	3-LS4-1	N/A	4. DATA	SPQ	2	5

SEP = blue; DCI = orange; CCC = green An asterisk (*) denotes correct answer(s).

Multiple Choice
Performance Expectation
3-PS2-4 Define a simple design problem that can be solved by applying scientific ideas about magnets.

Use the information and your knowledge of science to answer the question. Marci has a gate that gets stuck once it closes. She wants to use magnets to keep the gate from closing all the way. She will use a magnet on the gate and another on the edge of the fence. She sets up some magnets as shown, in order to determine the best design.  	Which question is best for Marci to investigate using this setup? A. Which arrangements of magnets will push the gate away from the fence and prevent it from closing?* B. Which magnet shapes are able to hold the gate in place and prevent it from closing? C. How far apart should the magnets be placed to pull the gate toward the fence and prevent it from closing? D. How strong does a magnet need to be so that it can pull or push the gate and prevent it from closing?

Multi-Dimensional Alignment: While effectively applying the science and engineering practice of defining a design problem the student demonstrates knowledge of applying scientific ideas to solve problems associated with magnets.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 3 or higher. The student can identify the variables in a simple problem that can be solved with magnets.

Which question is best for Marci to investigate using this setup?

A. Which arrangements of magnets will push the gate away from the fence and prevent it from closing?*

Rationales

A. Correct.
B. All magnets in the setup have the same shape.
C. All magnets in the setup are placed the same distance away from each other.
D. All magnets in the setup are assumed to have the same strength.

Multiple Select
Performance Expectation
3-ESS2-1 Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Use the information and your knowledge of science to answer the question.

In a large area in southern Asia, a major change in wind direction causes a great amount of rain to fall for months. The table shows observations about the amount of rainfall for two cities in southern Asia.

Rainfall Observations

		City 1	City 2
Rainfall (centimeters)	Jan.	1	2
	Feb.	2	3
	Mar.	6	6
	April	12	9
	May	17	10
	June	36	28
	July	40	30
	Aug.	32	39
	Sept.	36	25
	Oct.	16	9
	Nov.	3	7
	Dec.	1	7

City 3 is also found in southern Asia.

When will City 3 **most likely** have the greatest amount of rainfall?

Select the **two** correct answers.

A. January and February
B. March and April
C. May through July*
D. August and September*
E. October through December

Multi-Dimensional Alignment: The item requires the student to apply the science and engineering practices of analyzing and interpreting data, and knowledge of typical weather conditions expected during a particular season to demonstrate understanding of patterns.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 5 or higher. The student can analyze data in a table to make a claim about typical weather conditions expected during a particular season.

When will City 3 most likely have the greatest amount of rainfall?

Select the two correct answers.

C. May through July*

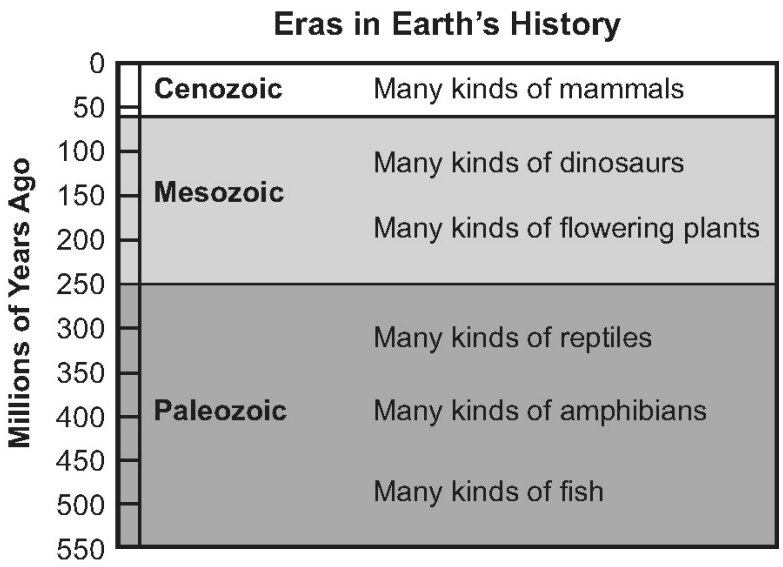
D. August and September*

Rationales

A. January and February have the lowest rainfall values.
B. March and April have lower rainfall values than June, July, August or September.
C. Correct.
D. Correct.
E. October through December have lower rainfall values than April, May, June, July, August or September.

Two-Part Dependent
Performance Expectation
3-LS4-1 Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

Use the information and your knowledge of science to answer the questions.



Part A

Which statements **best** describe the number of fossils that were most likely left behind during each era?

Select the **two** correct answers.

A. The Cenozoic left behind the most fossils.
B. The Mesozoic left behind the most fossils.
C. The Paleozoic left behind the most fossils.*
D. The Cenozoic left behind the smallest number of fossils.*
E. The Paleozoic left behind the smallest number of fossils.

Part B

Which evidence **best** supports the answer to Part A?

A. Eras that contain more years leave behind more fossils.*
B. Eras that have bigger animals leave behind more fossils.
C. Eras that have more kinds of animals leave behind more fossils.
D. Eras that happened a shorter time ago leave behind more fossils.

Multi-Dimensional Alignment: The item requires the student to apply the science and engineering practices of analyzing and interpreting data, and knowledge of fossils and the types of organisms that lived to demonstrate an understanding of scale, proportion, and quantity.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 5 or higher. The student can use data to make a claim about fossils based on evidence about the organisms and the environments in which they lived long ago.

Part A
Which statements best describe the number of fossils that were most likely left behind during each era?

Select the two correct answers.

C. The Paleozoic left behind the most fossils.*

D. The Cenozoic left behind the smallest number of fossils.*

Part B
Which evidence best supports the answer to Part A?

A. Eras that contain more years leave behind more fossils.*

Rationales
Part A
A. The Cenozoic is the shortest time period listed.
B. The Mesozoic Era is about 100 million years shorter than the Paleozoic Era.
C. Correct.
D. Correct.
E. The Paleozoic Era is longer than the Cenozoic Era and the Mesozoic Era.

Part B
A. Correct.
B. The table does not provide any information about the relative sizes of the animals listed.
C. The table does not provide the number of animals living in each era.
D. The fossilization process can take millions of years.

Item Set: Salmon and River Dams

Item Type	PE	DCI	SEP	CCC	Points	Achievement Level
MC	3-LS4-4	UE.ETS1B.b	7. ARG		1	4
TPD	3-LS4-4	UE.LS4D.a	7. ARG		2	3
MC	3-LS4-4	UE.LS2C.a		SYS	1	4
CR	3-LS4-4	UE.ETS1B.b	7. ARG	SYS	2	5

SEP = blue; DCI = orange; CCC = green An asterisk (*) denotes correct answer(s).

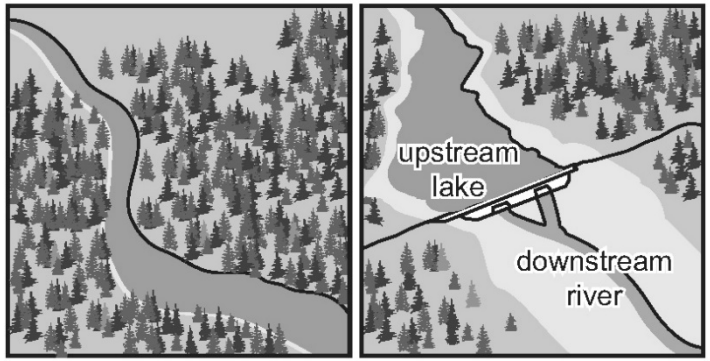
Note: This set may not represent a typical set, as there is only one PE represented.

Use the information about salmon and river dams and your knowledge of science to answer the questions.

Salmon and River Dams

There are almost 50,000 dams in the world. More dams are being built each year. Dams provide electricity, drinking water, and water for farming. The land near a river changes when a dam is built. Figure 1 shows what a river looked like before and after a dam was built.

Figure 1. A River Before and After Dam

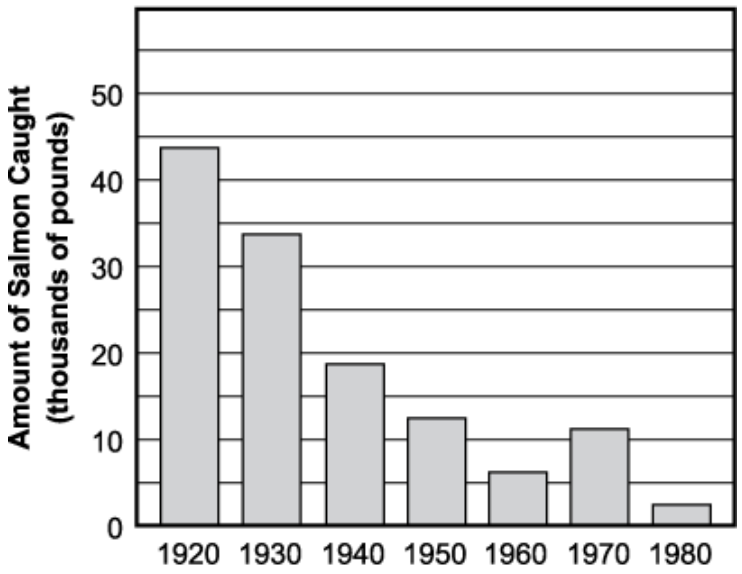


before dam was built **several years after dam was built**

A type of fish called a salmon is born in a river. After salmon are born, they swim to the ocean. Salmon live most of their lives in the ocean. When it is time to lay eggs, salmon swim from the ocean to the river they were born in. They then swim upstream to the place where they were born. There they lay eggs in the gravel on the bottom of the river.

Graph 1 shows the amount of salmon caught in a river each decade.

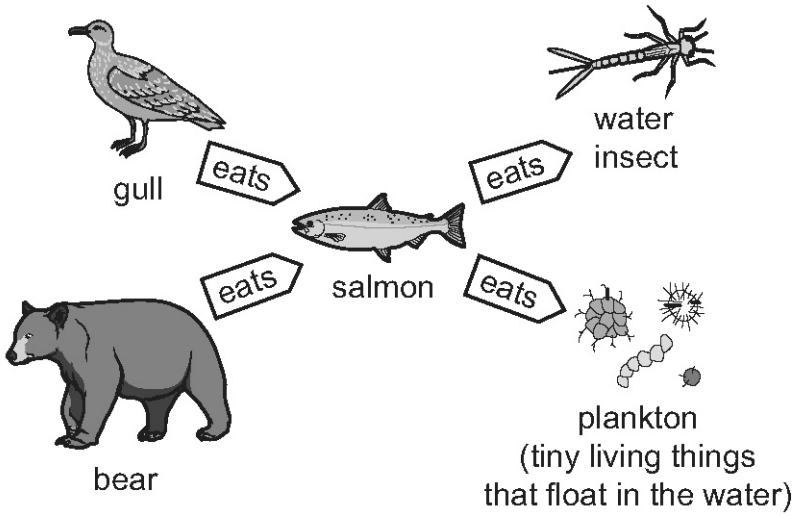
Graph 1. Salmon Caught Each Decade



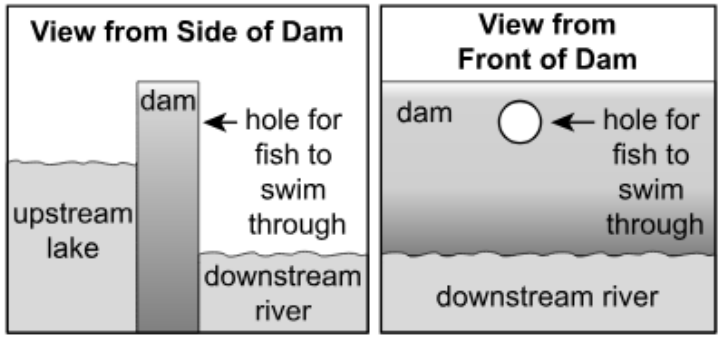
Source: Department of Physics, Electronic Classroom, University of Oregon, June 2017.

Figure 2 shows salmon in an ecosystem.

Figure 2. Salmon Ecosystem



Multiple Choice
Performance Expectation
3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

A student suggests a way to help salmon travel in a river where a dam is being built. **Student's Solution**  	Which argument would other students use against this proposed solution? A. The hole would let water through. B. The hole would allow small fish through. C. The hole is too high for fish to swim through.* D. The hole would allow other organisms through.

Multi-Dimensional Alignment: While effectively applying the science and engineering practice of engaging in an argument from evidence, the student demonstrates knowledge of the types of plants and animals that live there may change.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 4 or higher. The student can support a claim about the merit of a solution to a problem caused when the environment changes and the types of animals that live there may change.

Which argument would other students use against this proposed solution?

C. The hole is too high for fish to swim through.*

Rationales

A. The hole is above the water line.
B. Letting small fish through would be a benefit.
C. Correct.
D. Allowing the movement of organisms may be a positive outcome.

Two-Part Dependent
Performance Expectation
3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

River otters eat salmon and other fish.

River Otters

Source: Barrett Hedges/National Geographic Creative.

Part A

How will the river otter population **most likely** change if a dam is built in the river where the otters live?

A. The otter population will get bigger.
B. The otter population will get smaller.*
C. The otter population will stay the same.
D. The otter population will get bigger, then get smaller.

Part B

Which statement **best** supports the answer to Part A?

A. The otters will start eating other fish.
B. The otters will be unable to move past the dam.
C. The otters will move to areas with more fish.*
D. The otters will begin eating water plants instead of fish.

Multi-Dimensional Alignment: While effectively applying the science and engineering practice of engaging in an argument from evidence, the student demonstrates knowledge of the types of plants and animals that live there may change.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 3 or higher. The student can describe evidence of a problem caused when the environment changes and the types of animals that live there may change.

Part A
How will the river otter population **most likely** change if a dam is built in the river where the otters live?

B. The otter population will get smaller.*

Part B
Which statement **best** supports the answer to Part A?

C. The otters will move to areas with more fish.*

Rationales
Part A
A. The otter population would have less access to resources.
B. Correct.
C. The otter population will decline.
D. The dam will cause a decrease in the otter's food source.

Part B
A. The otter population would benefit if the otters could change their diet.
B. The otters are able to move around the dam.
C. Correct.
D. The otters will not be able to survive by eating plants.

Multiple Choice
Performance Expectation
3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Which organism from Figure 2 will likely die out or move away from the area after a dam has been built?

A. plankton, because there will be less water in the river for them to live in
B. water insects, because there will be fewer salmon in the river to eat them
C. bears, because there will not be enough salmon in the river for them to eat*
D. gulls, because there will not be places on the shore for them to build nests

Multi-Dimensional Alignment: The item requires the student to apply knowledge of the types of plants and animals that live there may change to demonstrate an understanding of systems and system models.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 4 or higher. The student can describe a problem caused when the environment changes and the types of animals that live there may change.

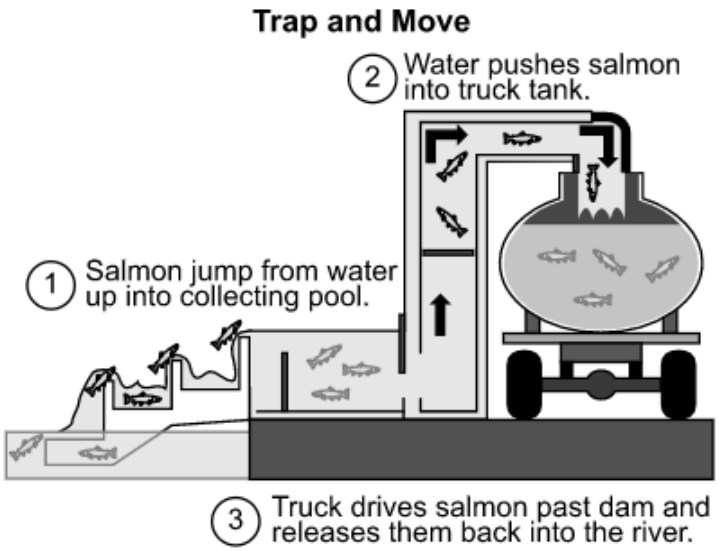
Which organism from Figure 2 will likely die out or move away from the area after a dam has been built?

C. bears, because there will not be enough salmon in the river for them to eat*

Rationales
A. Plankton are very small and do not depend on larger animals to survive.
B. Water insects will have fewer predators.
C. Correct.
D. Gulls could still build nests on land around the reservoir.

Constructed Response
Performance Expectation
3-LS4-4 Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Trapping and moving salmon is one method to help the salmon that live in a river near a dam, as shown in the diagram.



Explain how well this method will address the problem of the decreasing salmon population. Be sure to include one problem with this method in your answer.

Multi-Dimensional Alignment: The item requires the student to apply the science and engineering practice of engaging in an argument from evidence, and knowledge of the types of plants and animals that live there may change to demonstrate an understanding of systems and system models.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 5 or higher. The student can make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Trapping and moving salmon is one method to help the salmon that live in a river near a dam, as shown in the diagram.

Explain how well this method will address the problem of the decreasing salmon population. Be sure to include one problem with this method in your answer.

Scoring Information	
Score	Description
2	Student's response correctly explains how well the trap and move system will address the problem AND describes some drawbacks of the solution.
1	Student's response correctly explains how well the trap and move system will address the problem, but does not describe any drawbacks of the solution.
0	Student's response does not correctly explain how well the trap and move system will address the problem or describe any drawbacks of the solution.

Scoring notes	Examples
Explanation of how well the system will address the problem (1 point)	• The trap and move system will solve the problem because it will make sure fish can swim upstream to lay their eggs. The trap and move system will cost money because people have to buy trucks so they can move fish, and have to buy gas for the trucks.
Description of at least one drawback of the solution (1 point)	• The trap and move system will make sure the salmon population does not get smaller. This is because fish will be able to get past the dam so they can lay eggs. The system will not be perfect, though. Not all the fish will find the ladder and get into the truck, so not all of the fish that travel upriver will be able to get past the dam and lay eggs.

Student Responses (CR)

Explain how well this method will address the problem of the decreasing salmon population. Be sure to include one problem with this method in your answer.

Response 1

The method will address the problem of decreasing salmon population. I know this because when the people take the salmon and make them go through all of the jumps and curves it could help the salmon move around and then take them and put them on the other side of the dam so they can go grow up and then come back as close as they can to the dam to lay her or his eggs down on the river flor and let them hatch and start the life cylcle all over again. One problem that could happen with this method is making the fish slam and get thrown around while going through all the curves and twist

Score: 2

This response earns a 2. It accurately explains how well this method will address the problem of the decreasing salmon population: “when the people take the salmon and make them go through all of the jumps and curves it could help the salmon move around and then take them and put them on the other side of the dam so they can go grow up and then come back as close as they can to the dam to lay her or his eggs down on the river flor and let them hatch and start the life cylcle all over again.” The response also accurately describes at least one drawback of the solution: “One problem that could happen with this method is making the fish slam and get thrown around while going through all the curves and twist.”

Response 2

The method will work because if the salmon need to get past the dam to lay eggs the truck wil take them past the dam.

Score: 1

This response earns a 1. It accurately explains how well the trap and move system will address the problem: “the truck wil take them past the dam.” The response does not correctly describe at least one drawback of the solution.

Response 3

It will make the population of the salmon stay the same they are just put ing up a diagram to check the amount of salmon in the river.

Score: 0

This response earns a 0. It does not accurately explain how well the trap and move system will address the problem: “It will make the population of the salmon stay the same.” It does not accurately describe some drawbacks of the solution: “they are just put ing up a diagram to check the amount of salmon in the river.”

Item Set: Forces and Cabinet Doors

Item Type	PE	DCI	SEP	CCC	Points	Achievement Level
MC	3-PS2-1	UE.PS2B.a		C/E	1	3
TPD	3-PS2-1	UE.PS2B.a	3. INV		2	2
MC	3-PS2-4	UE.ETS1A.a	1. Q/P		1	5
CR	3-PS2-4	UE.PS2B.b		PAT	2	5

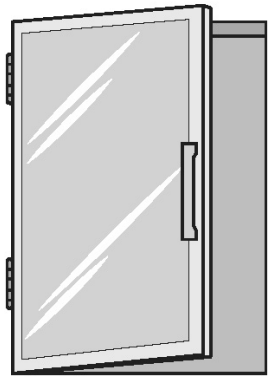
SEP = blue; DCI = orange; CCC = green An asterisk (*) denotes correct answer(s).

Use the information about forces and cabinet doors and your knowledge of science to answer the questions.

Forces and Cabinet Doors

Jamie wakes up in the morning to get ready for school. She cannot get the metal door on her medicine cabinet to stay closed.

Figure 1. Medicine Cabinet



She notices that the door opens as soon as she stops pushing on it.

She wants to figure out a way to fix the metal door so that it will stay shut. She does an experiment using different materials.

Table 1. Types of Materials

Material	Image of Material	Description of Material
Double-sided tape		• Tape that is sticky on both sides. • Can hold lightweight materials on most surfaces.
Sticky putty		• Sticky material that can be made into many shapes. • Can hold lightweight materials on most surfaces.
Small circular magnet		• Magnet the size of a dime. • Can hold lightweight materials on some surfaces.
Alphabet letter magnet		• Small magnet on one side and plastic letter on the other side. • Can hold lightweight materials on some surfaces.

Jamie puts each material on the door. She measures how long the cabinet door stays closed. Her observations are shown in Table 2.

Table 2. Observations from Experiment

Material	Time the Door Stayed Closed	Observations
Double-sided tape	10 seconds	Door stayed closed for a few seconds, and then it started to swing open.
Sticky putty	45 seconds	Door stayed closed for a little while, and then it started to swing open.
Small circular magnet	Door did not open.	A strong pull was felt when the small circular magnet was put on the cabinet. Door stayed closed and did not swing open.
Alphabet letter magnet	0 seconds	A weak pull was felt when the alphabet letter magnet was put on the cabinet. Door started to swing open immediately.

Multiple Choice
Performance Expectation
3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

Which statement best explains the forces acting on the door during the experiment?

A. When the door stays closed, the forces are balanced.*
B. When the door is swinging open, the forces are balanced.
C. When the door stays open, the force pushing toward the cabinet is stronger.
D. When the door is swinging closed, the force pushing away from the cabinet is stronger.

Multi-Dimensional Alignment: The item requires the student to apply knowledge of balanced and unbalanced forces to demonstrate an understanding of cause and effect.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 3 or higher. The student can describe the effects of balanced and unbalanced forces on the motion of an object.

Which statement best explains the forces acting on the door during the experiment?

A. When the door stays closed, the forces are balanced.*

Rationales
A. Correct.
B. The forces acting on an object are balanced if the object is at rest.
C. If the door does not move, the forces acting on it are balanced.
D. If the force directed away from the cabinet is stronger, the door would swing open.

Two-Part Dependent
Performance Expectation
3-PS2-1 Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.

Part A

Which material puts forces on the door that have the same effect as the forces when Jamie holds the door closed?

A. double-sided tape
B. sticky putty
C. small circular magnet*
D. alphabet letter magnet

Part B

Which sentence best explains the answer to Part A?

A. The material will hold on to the door or the cabinet.
B. The material is sticky but too flexible to keep the door closed.
C. The material has a strong enough pull to keep the door closed.*
D. The material is sticky on both sides and can hold the door closed for a short time.

Multi-Dimensional Alignment: The item requires the student to apply the science and engineering practices of planning and conducting investigations, and knowledge of balanced and unbalanced forces to demonstrate an understanding of cause and effect.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 2 or higher. The student can identify the effects of forces on the motion of an object.

Part A
Which material puts forces on the door that have the same effect as the forces when Jamie holds the door closed?

C. small circular magnet*

Part B
Which sentence **best** explains the answer to Part A?

C. The material has a strong enough pull to keep the door closed.*

Rationales
Part A
A. Double-sided tape kept the door closed for only 10 seconds.
B. Sticky putty kept the door closed for 45 seconds.
C. Correct.
D. The alphabet magnet did not keep the door closed.

Part B
A. The solution should keep the door closed.
B. The solution does not require a flexible material.
C. Correct.
D. The door needs to remain closed.

Multiple Choice
Performance Expectation
3-PS2-4 Define a simple design problem that can be solved by applying scientific ideas about magnets.

Which other household material could Jamie use to solve her problem?

A. duct tape, because it is very sticky and can be taken off the cabinet a few times
B. a hook and loop fastener, because it can hold materials together and can be used many times*
C. superglue, because it can hold materials together very tightly and can be used only one time
D. liquid craft glue, because it can hold lightweight objects together and is the same color as the cabinet

Multi-Dimensional Alignment: While effectively applying the science and engineering practice of defining problems, the student demonstrates knowledge that the success of a designed solution is determined by considering the desired features of the solution.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 5 or higher. The student can revise a simple design problem that can be solved by applying scientific ideas about magnets.

Which other household material could Jamie use to solve her problem?

B. a hook and loop fastener, because it can hold materials together and can be used many times*

Rationales
A. The duct tape will stop working after multiple uses.
B. Correct.
C. Superglue will prevent the door from opening.
D. Liquid Craft glue will prevent the door from opening.

Constructed Response
Performance Expectation
3-PS2-4 Define a simple design problem that can be solved by applying scientific ideas about magnets.

Explain what would happen if Jamie used a large, strong magnet on the cabinet door. Be sure to explain:
- How well the magnet will keep or not keep the cabinet door shut.
- How the forces of the new magnet will compare to the forces of the other materials used in the experiment.

Multi-Dimensional Alignment: The item requires the student to apply knowledge of magnetic forces to demonstrate an understanding of patterns.

Achievement Level Descriptor: Students who answer this item correctly are performing at a level of 5 or higher. The student can revise a simple design problem that can be solved by applying scientific ideas about magnets.

Explain what would happen if Jamie used a large, strong magnet on the cabinet door. Be sure to explain:
- How well the magnet will keep or not keep the cabinet door shut.
- How the forces of the new magnet will compare to the forces of the other materials used in the experiment.

Scoring Information	
Score	Description
2	Student's response correctly predicts whether the magnet will keep the cabinet door shut AND compares the forces of the magnet to the forces of other materials used in the experiment.
1	Student's response correctly predicts whether the magnet will keep the cabinet door shut, but does not compare the forces of the magnet to the forces of other materials used in the experiment.
0	Student's response does not correctly predict whether the magnet will keep the cabinet door shut or compare the forces of the magnet to the forces of other materials used in the experiment.

Scoring notes	Examples
Prediction about whether the large, strong magnet will keep the cabinet door shut (1 point)	• The cabinet door is kept closed better than with any of the other materials. This is because the pull of the force will be stronger than any other material used in the experiment.
Comparison of forces of large, strong magnet with forces of other materials used in the experiment (1 point)	• The large, strong magnet will be able to keep the cabinet door closed better than the other materials. This is because it will have a stronger force than the small circular magnet. The small circular magnet had a stronger force than the other materials, so the large, strong magnet will have the strongest force of all the materials.

Student Responses (CR)
Explain what would happen if Jamie used a large, strong magnet on the cabinet door.

Response 1

If Jamie used a large strong magnet it would keep the cabinet door closed tight and can be used more than once. The large strong magnet will hold the cabinet door shut better than all the materials she used before because its strong and has more force.

Score: 2
This response earns a 2. It correctly predicts whether the magnet will keep the cabinet door shut: "it would keep the cabinet door closed tight." It also accurately compares the forces of the magnet to the forces of other materials used in the experiment: "The large strong magnet will hold the cabinet door shut better than all the materials she used before because its strong and has more force."

Response 2

the magnet closed the cabnet because the maget stuck to the metal.

Score: 1
This response earns a 1. It correctly predicts whether the magnet will keep the cabinet door shut: "the magnet closed the cabinet." It does not accurately compare the forces of the magnet to the forces of other materials used in the experiment: "because the maget stuck to the metal."

Response 3

see a magnet is a very srong object it hang on your refrigearator and it can hold on to magnetic glass in other things to

Score: 0
This response earns a 0. It does not correctly predict whether the magnet will keep the cabinet door shut: "see a magnet is a very srong object it hang on your refrigearator." It does not accurately compare the forces of the magnet to the forces of other materials used in the experiment: "it can hold on to magnetic glass in other things to"

Resources

Contact the LDOE

- assessment@la.gov for assessment questions
- STEM@la.gov for instructional or curriculum implementation support
- AskLDOE for general questions
- ldoecommunications@la.gov to subscribe to newsletters; include the newsletter(s) you want to subscribe to in your email

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The table below lists any updates made to this document after the original posting date.

Available	Description of Updates
July 2025	Document original posting.

Email assessment@la.gov with any questions or comments about this released item guide.