Wyoming

DEPARTMENT OF EDUCATION

PAWS
Science
Grade 8

Released Items
With Data

2015

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Science Released Items with Data
Introduction Page / Data Definitions

This Released Items with Data document provides a subset of items from the 2014 administration of the PAWS test. The data for an item is on the page that follows that item. The following provides definitions for the data fields on the data page.

Item Information

Title: Title of the passage/stimulus the item belongs to

Domain: The reporting category of the state content standards

Benchmark: State content standard

Context: Main idea from subject matter

Item Code: Identification code assigned to the item

Admin: The year an item is administered

Item Type: The mode in which a student responds (MC means multiple-choice)

Correct Answer: The option letter (A, B, C, or D) that corresponds to the correct answer

Item Dok: The item's Depth of Knowledge designation, also called Cognitive Complexity;
1 - Recall and reproduction
2 - Skills and concepts
3 - Strategic and extended thinking

Total N-count: Number of students counted as taking the test in which the item appears during the listed administration (Includes item omissions)

Pvalue/Mean Score: For a multiple-choice item, the percent of students choosing the correct answer

Score Analysis

MC Row: Answer options available for students to choose from (including those who do not choose any option); an asterisk designates the correct answer

%Choosing Row: Percent of students choosing an option (or omitting)

Item Notes: Area where user can make notes

Arctic Fox Adaptations

The Arctic fox can survive in some of the most extreme cold climates. It has thick fur and a round, compact body designed to minimize exposure to cold air.

A team of scientists traveled to Alaska to study the Arctic fox and better understand the connection between behavior and adaptation. The scientists recorded the Arctic fox coat color over time. The coat turns brown in the summer that camouflages with the tundra and turns white in the winter that camouflages with the snow. The pictures show the Arctic fox in both seasons.

Summer Coat

© Josef Friedhuber/iStockphoto #18462345

Winter Coat

© John Pitcher/iStockphoto #4117276

The scientists also observed how Arctic foxes hunt. The fox locates its prey beneath the snow using its very sensitive hearing. Its wide, front-facing ears listen intently for the slightest sound. When the Arctic fox hears its prey, it leaps into the air and breaks through the snow, crashing down onto its prey underneath, as shown.

Leaping for Prey

© Gary Schultz/Alaskastock.com

00 **Scientists want to determine the force of the Arctic fox as it leaps into the snow to catch its prey. What type of data will the scientists need in order to calculate this force?**

A) Time and distance

B) Gravity and height

C) Mass and acceleration

D) Displacement and weight

Item Information	
Title:	Arctic Fox Adaptations
Domain:	Physical Systems
Benchmark:	SC8.1.14 Effects of Motions and Forces: Students describe motion of an object by position, direction, and speed, and identify the effects of force and inertia on an object.
Context:	F Forces and Motion
Item Code:	VF671343

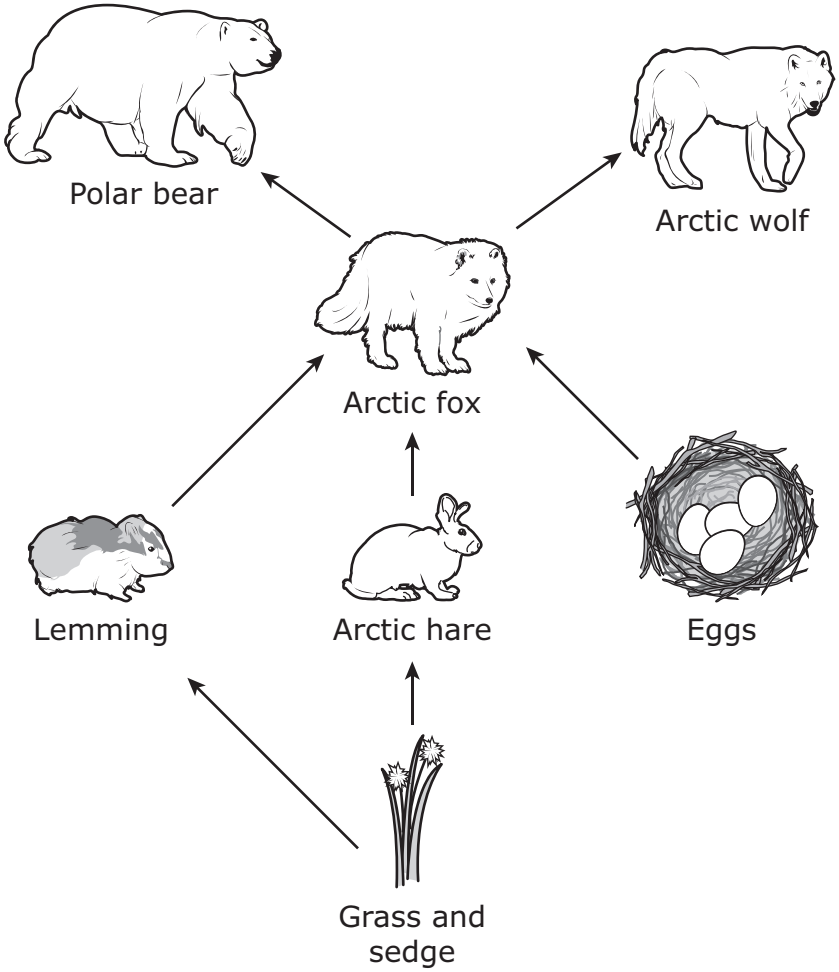
Admin:	Item Type:	Correct Answer:	Item Dok:	Total N-count:	Pvalue/Mean Score:
Spring 2014	MC	C	2	671	0.569

Score Analysis					
MC	**A**	**B**	**C***	**D**	**Omit**
%Choosing	9.836	17.735	56.93	15.499	0

Item Notes

00 **The diagram shows a partial food web for the Arctic fox.**

Arctic Fox Food Web



Which energy trophic level is the lemming in the food web?

A) Primary producer

B) Primary consumer

C) Secondary consumer

D) Tertiary consumer

Item Information	
Title:	Arctic Fox Adaptations
Domain:	Life Systems
Benchmark:	SC8.1.6 Interrelationships of Populations and Ecosystems: Students illustrate populations of organisms and their interconnection within an ecosystem, identifying relationships among producers, consumers, and decomposers.
Context:	C Interactions and Energy Flow
Item Code:	VF671342

Admin:	Item Type:	Correct Answer:	Item Dok:	Total N-count:	Pvalue/Mean Score:
Spring 2014	MC	B	2	649	0.39

Score Analysis					
MC	**A**	**B***	**C**	**D**	**Omit**
%Choosing	18.028	38.983	24.653	18.336	0

Item Notes

00 **Arctic foxes have two possible winter coat color types. A white coat is a recessive trait (b), and a blue coat is a dominant trait (B). Approximately 99% of the Arctic foxes have a white winter coat. A new litter of Arctic foxes with white winter coats is born. Which Punnett square shows the <u>most likely</u> genetic makeup of the parents?**

A)

	B	b
B		
b		

C)

	B	B
B		
B		

B)

	B	B
B		
b		

D)

	b	b
b		
b		

Item Information	
Title:	Arctic Fox Adaptations
Domain:	Life Systems
Benchmark:	SC8.1.4 Diversity of Organisms: Students investigate the interconnectedness of organisms, identifying similarity and diversity of organisms through a classification system of hierarchical relationships and structural homologies.
Context:	C Interactions and Energy Flow
Item Code:	VF671334

Admin:	Item Type:	Correct Answer:	Item Dok:	Total N-count:	Pvalue/Mean Score:
Spring 2014	MC	D	3	785	0.478

Score Analysis					
MC	**A**	**B**	**C**	**D***	**Omit**
%Choosing	24.331	15.159	12.611	47.771	0.127

Item Notes

00 **The lemming is a small herbivorous rodent that the Arctic fox hunts for food. Which of these would most likely happen if the growth of vegetation suddenly increased?**

A) The lemming population would decrease, and the Arctic fox population would decrease soon afterward.

B) The lemming population would increase, and the Arctic fox population would increase soon afterward.

C) The lemming population would increase, and the Arctic fox population would decrease.

D) The lemming population would decrease, and the Arctic fox population would increase.

Item Information	
Title:	Arctic Fox Adaptations
Domain:	Life Systems
Benchmark:	SC8.1.6 Interrelationships of Populations and Ecosystems: Students illustrate populations of organisms and their interconnection within an ecosystem, identifying relationships among producers, consumers, and decomposers.
Context:	C Interactions and Energy Flow
Item Code:	VF671294

Admin:	Item Type:	Correct Answer:	Item Dok:	Total N-count:	Pvalue/Mean Score:
Spring 2014	MC	B	3	671	0.705

Score Analysis					
MC	**A**	**B***	**C**	**D**	**Omit**
%Choosing	9.389	70.492	8.197	11.923	0

Item Notes

00 **A building is constructed within the hunting area of the Arctic fox. Which impact would <u>most likely</u> affect the Arctic fox due to the construction?**

A) The prey of the Arctic fox will decrease due to destruction of habitat.

B) The Arctic fox will change its hunting style due to a change in habitat.

C) New prey of the Arctic fox will appear due to an increase in habitat area.

D) The Arctic fox's brown coat will remain during the winter due to the rearrangement of its habitat.

Item Information	
Title:	Arctic Fox Adaptations
Domain:	Life Systems
Benchmark:	SC8.1.6 Interrelationships of Populations and Ecosystems: Students illustrate populations of organisms and their interconnection within an ecosystem, identifying relationships among producers, consumers, and decomposers.
Context:	C Interactions and Energy Flow
Item Code:	VF671280

Admin:	Item Type:	Correct Answer:	Item Dok:	Total N-count:	Pvalue/Mean Score:
Spring 2014	MC	A	3	671	0.681

Score Analysis					
MC	**A***	**B**	**C**	**D**	**Omit**
%Choosing	68.107	19.225	8.793	3.875	0

Item Notes

00 **Which observed adaptation <u>best</u> protects the Arctic fox from predators?**

A) The color of its fur

B) The height of its jump

C) The sensitivity of its ears

D) The roundness of its body

Item Information	
Title:	Arctic Fox Adaptations
Domain:	Life Systems
Benchmark:	SC8.1.5 Behavior and Adaptation: Students recognize behavior as a response of an organism to an internal or environmental stimulus and connect the characteristics and behaviors of an organism to biological adaptation.
Context:	C Interactions and Energy Flow
Item Code:	VF671265

Admin:	Item Type:	Correct Answer:	Item Dok:	Total N-count:	Pvalue/Mean Score:
Spring 2014	MC	A	2	785	0.831

Score Analysis					
MC	**A***	**B**	**C**	**D**	**Omit**
%Choosing	83.057	2.675	11.847	2.42	0

Item Notes