



ExploreLearning

Getting Ready for Florida Assessments with Gizmos

Examples from Florida Standards Assessments, FCAT 2.0, and End-of-Course Assessments



Gizmos assessment alignments

- Slides were created using select sample questions from the following:
 - Florida Standards Assessments, [mathematics \(grades 3-8\)](#)
 - FCAT 2.0, [mathematics \(grades 6-8\)](#)
 - FCAT 2.0, [science \(grade 8\)](#)
 - End-of-Course Assessments, [biology 1](#)

Mathematics, Grades 3-8

FLORIDA STANDARDS ASSESSMENTS

Gizmo: Rounding Whole Numbers (Number Line)

GRADE 3 MAFS.3.NBT.1.1: Use place value understanding to round whole numbers to the nearest 10 or 100.

Question 1 Grade 3

1

What is 78 rounded to the nearest ten?

- (A) 70
- (B) 75
- (C) 80
- (D) 100

Round to nearest **Ten**

70 71 72 73 74 75 76 77 78 79 80

number rounded
78 80

not on number line
not on number line

Number line Flat Hill

Gizmo: Chocomatic (Multiplication, Arrays, and Area)

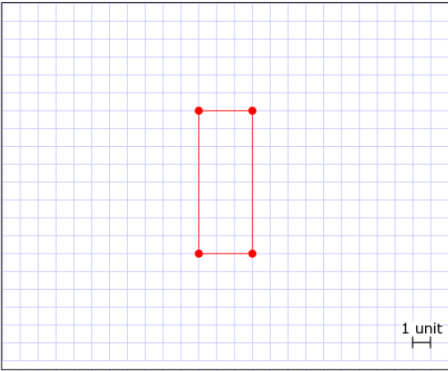
GRADE 4. MAFS.4.NBT.2.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

3

Use the Connect Line tool to create a rectangle with an area of 24 square units.

Question 3
Grade 4

Delete Add Point Connect Line



1 unit

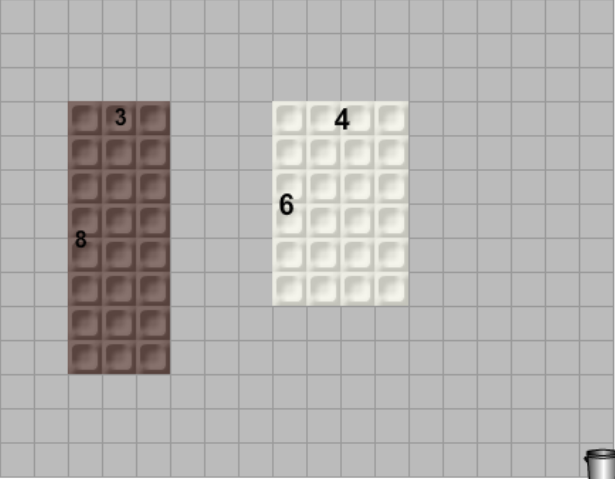
Chocomatic!
Design, Pour, Wrap

Filling 24 squares, $24 = 4 + 4 + 4 + 4 + 4 + 4$

- Design molds
- Pour chocolate
 - white chocolate
 - Use enough to fill: 24 squares
 - Use auto-filler
- Wrap

Show dimensions
 Show wrapper labels

Clear



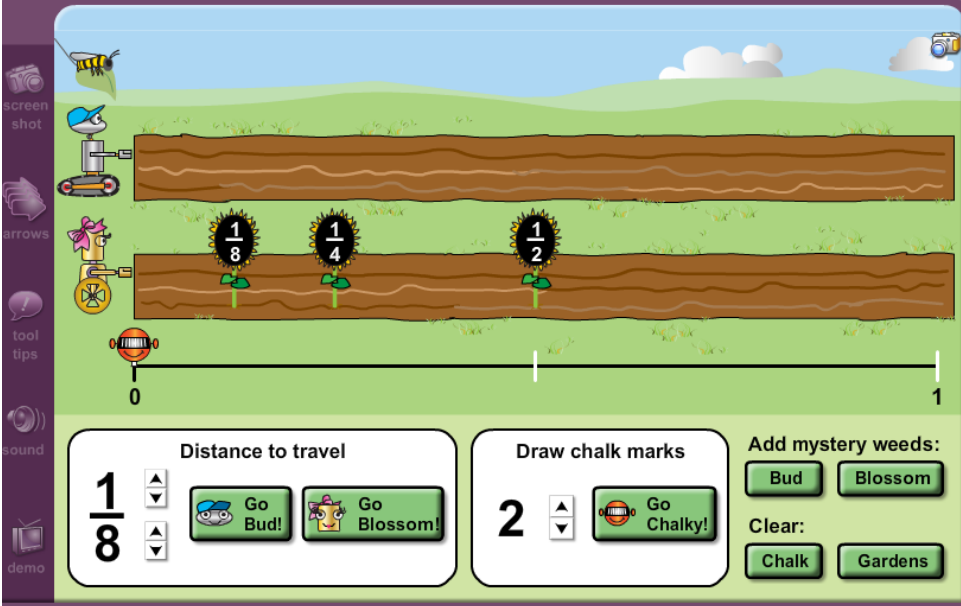
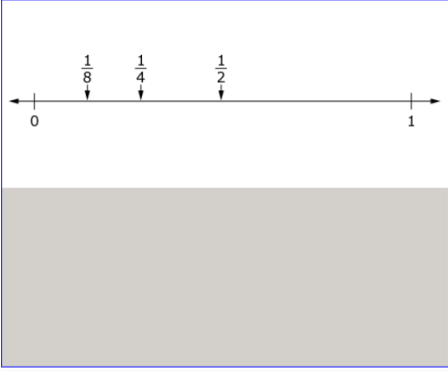
Gizmo: Fraction Garden

GRADE 4 MAFS.4.NF.1.2: Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$.

Question 7
Grade 4

7

Place the fractions in the correct location on the number line.



Distance to travel

$\frac{1}{8}$

Go Bud! Go Blossom!

Draw chalk marks

2

Go Chalky!

Add mystery weeds:

Bud Blossom

Clear:

Chalk Gardens

Gizmo: Integers, Opposites, and Absolute Values

GRADE 6 MAFS.6.NS.3.6c Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.

Question 8
Grade 6

8

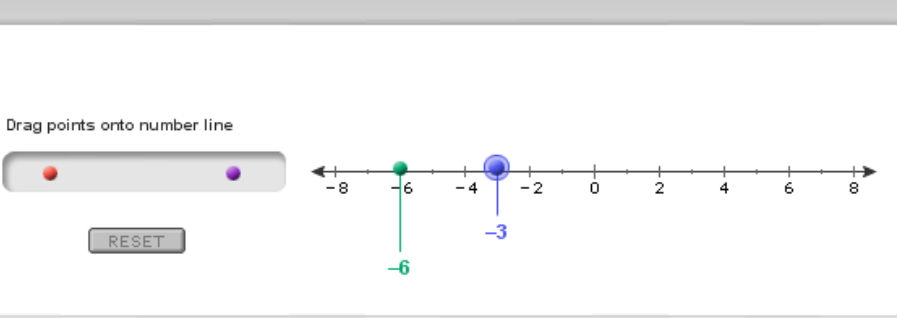
Drag an inequality sign to each box to compare the pairs of numbers.

-4 < -1

-4 < 1

-3 > -6

Drag points onto number line



RESET

Compare numbers Show opposites Show absolute values

$-6 < -3$

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Gizmo: Reflections, Rotations, and Translations

GRADE 6 MAFS.6.G.1.3 Draw polygons in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate.

17

The vertices for one side of a rhombus are located at $(-6, 0)$ and $(0, 6)$.

Use the Connect Line tool to draw the rhombus.

Question 17
Grade 6

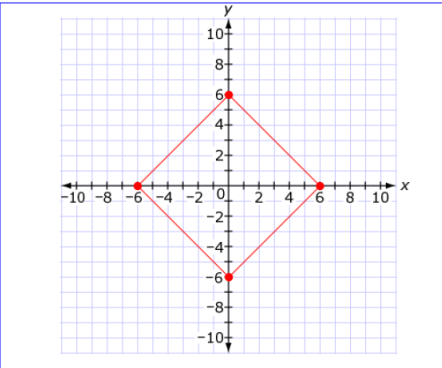
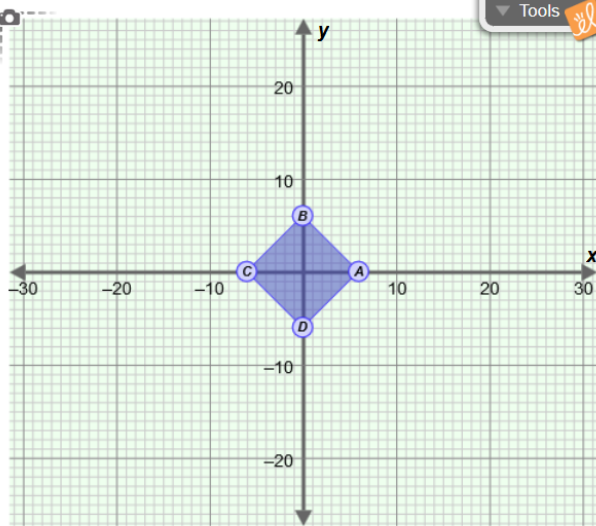


Figure type
Quadrilateral

Operation
None

Show table

Original	
A: (6, 0)	
B: (0, 6)	
C: (-6, 0)	
D: (0, -6)	



Show ruler Show angle measure tool

Show ruler Show angle measure tool

Gizmo: Independent and Dependent Events

GRADE 7 MAFS.7.SP.3.8: Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

Question 15
Grade 7

15

Lindsey used a bag of candy to do a probability experiment. In the experiment, she selected one piece of candy at random from the bag, recorded the color, and put the candy back in the bag. She performed this action 12 times and recorded her results in the table shown.

Probability Experiment

Candy Color	Number of Times Selected
Green	2
Orange	1
Purple	4
Yellow	5

Based on the results, what is the probability that the next piece of candy Lindsey selects will be a purple candy?

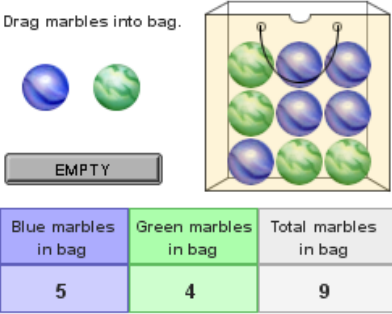
A $\frac{1}{4}$

B $\frac{1}{3}$

C $\frac{1}{2}$

D $\frac{2}{3}$

Drag marbles into bag.



EMPTY

Blue marbles in bag	Green marbles in bag	Total marbles in bag
5	4	9

Replace marbles after each draw?

Yes No

Number of draws:

1 2 3 4

THEORETICAL EXPERIMENTAL

Outcome	Frequency	Probability
B	8	$\frac{8}{12} \approx 67\%$
C	4	$\frac{4}{12} \approx 33\%$

Run 1 trial Run 1000 trials CLEAR

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Gizmo: Trends in Scatter Plots

GRADE 8 MAFS.8.SP.1.1: Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association.

2

A scientist is researching changes to a river's ecosystem. He believes something is destroying the food source of the fish in the river over time.

Use the Add Point tool to plot **eight** points to complete a scatter plot so that it supports the scientist's claim.

Question 2
Grade 8

Effect on Fish Weight Over Time

Year	Weight (lb)
1	12
2	11
3	10
4	9
5	8
6	7
7	6
8	5

Select locations of points.

CONTROLS TABLE

Negative trend No trend Positive trend

Fit a line

Show actual trend line

Generate new data set with:

Negative trend Positive trend

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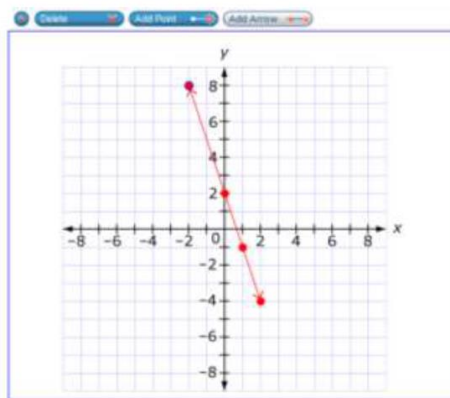
Gizmo: Slope-Intercept Form of a Line - Activity B

GRADE 8 MAFS.8.EE.2 Understand the connections between proportional relationships, lines, and linear equations.

Question 14 Grade 8

14

Use the Add Arrow tool to graph a line that has a slope of -3 and a y -intercept of 2 .



Select two (2) points to connect with the double arrow

CONTROLS TABLE

$y = mx + b$

$y = -3x + 1$

m

b

Show triangle

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Gizmo: Reflections, Rotations, and Translations

GRADE 9 MAFS.912.G-CO.1.2: Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs.

Question 14 Geometry

14



A figure is shown.

Use the Add Arrow tool to draw the line of reflection that carries the shape onto itself.

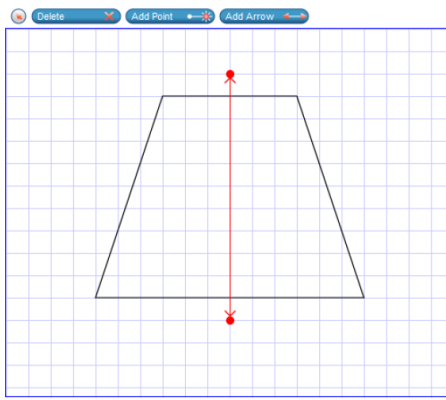


Figure type

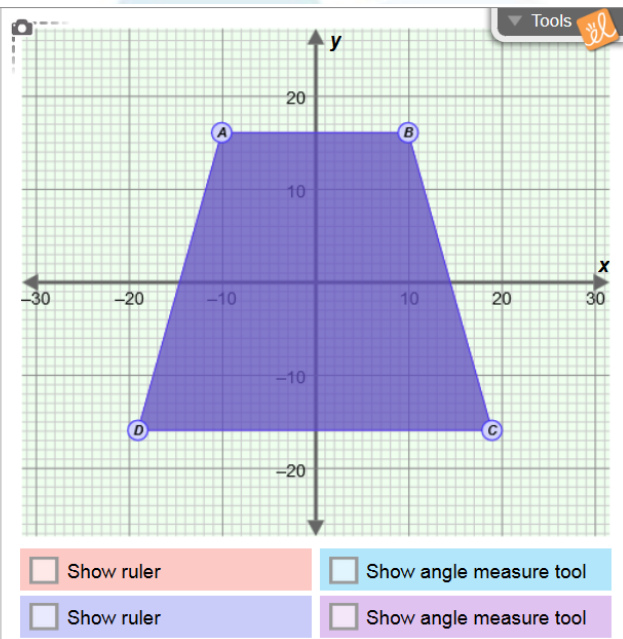
Quadrilateral

Operation

Reflect over y-axis

Show table

Original	Reflected
A: (-10, 16)	E: (10, 16)
B: (10, 16)	F: (-10, 16)
C: (19, -16)	G: (-19, -16)
D: (-19, -16)	H: (19, -16)



Science, grade 8

FCAT 2.0

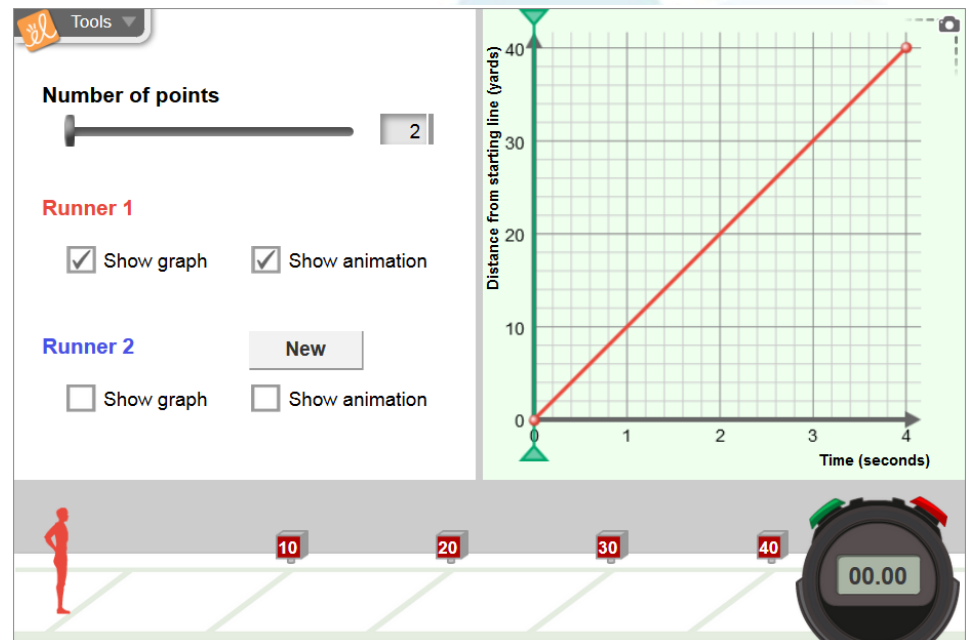
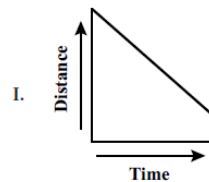
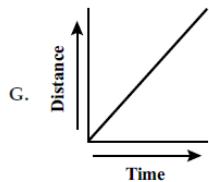
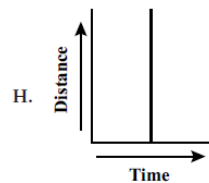
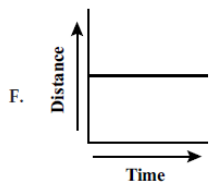


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Gizmo: Distance-Time Graphs

GRADE 8 FCAT 2.0 Science sample test question.

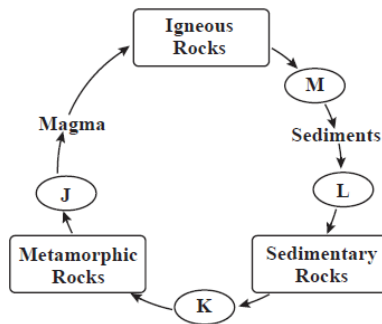
2 Mr. Roberts drives his car away from his house at a constant speed. Which of the following graphs best shows the relationship between the distance traveled and the time spent driving?



Gizmo: Rock Cycle

GRADE 8 FCAT 2.0 Science sample test question.

- 3 Ice forms in the cracks of a basalt rock formation and breaks some rock into smaller pieces. The diagram below shows part of the rock cycle.



At which point in the cycle shown above would the process of breaking down rocks occur?

- A. J
- B. K
- C. L
- D. M

SIMULATION PATH

The rock is now: Soil
When rocks are exposed to rain, ice, and the action of plants, they gradually break down into smaller particles such as cobbles, pebbles, sand, silt, and clay.

Soil

What do you want to do with your rock?

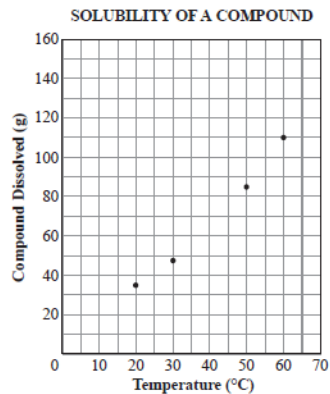
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Gizmo: Solubility and Temperature

GRADE 8 FCAT 2.0 Science sample test question.

- 6 Students in Ms. Alvarez's eighth grade science class are investigating how temperature, in degrees Celsius ($^{\circ}\text{C}$), affects the solubility of a compound in 100 milliliters (mL) of water. Ms. Alvarez provides the students with a graph that shows the solubility of a certain compound, as shown below.



She then tells the students that she will demonstrate how many grams (g) of the compound will dissolve in 100 mL of water at 40°C . Based on the information in the graph, which of the following is the **best** prediction of how many grams of the compound will dissolve at 40°C ?

- F. 40 g
- G. 65 g
- H. 85 g
- I. 100 g

The simulation interface includes the following elements:

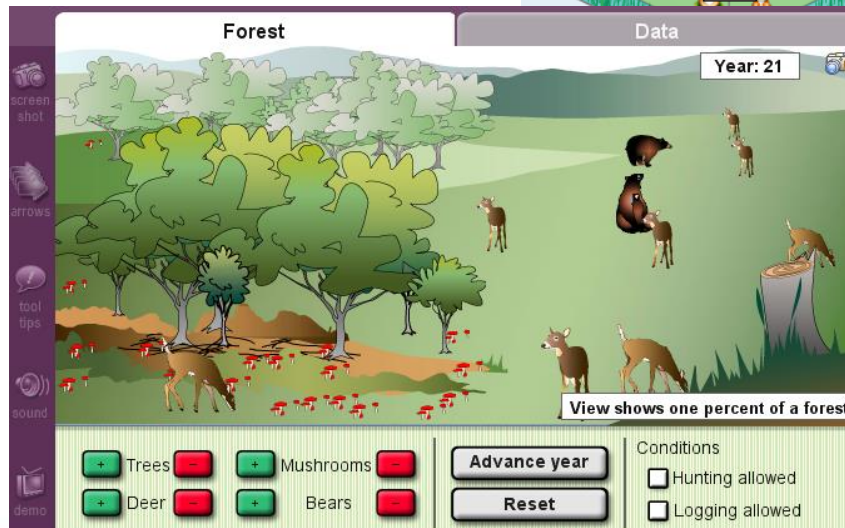
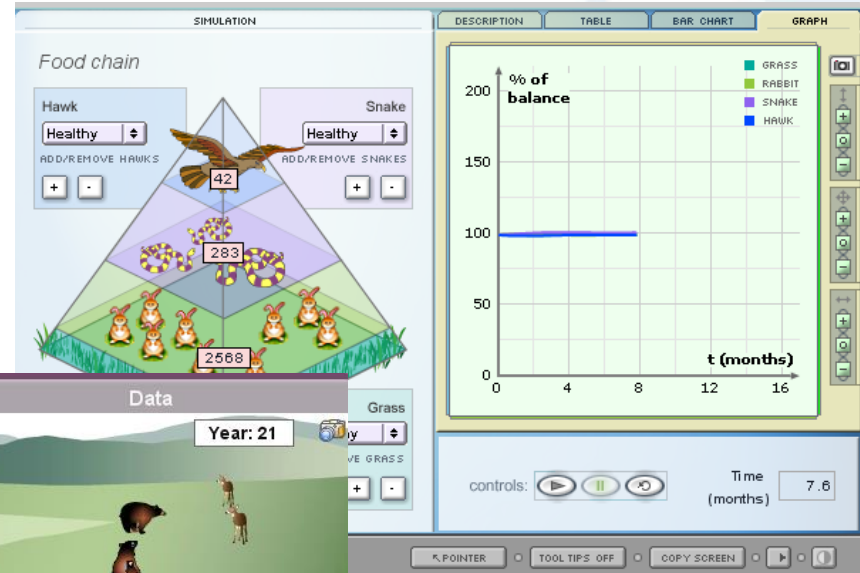
- TEMPERATURE:** A slider set to 95°C .
- COMPOUND:** A dropdown menu set to "Sodium chloride".
- BEAKER:** Labeled "100 mL of water".
- ADD BUTTONS:** "Add 1 g", "Add 5 g", "Add 10 g", "Add 20 g", "31 g", and "Reset".
- BAR CHART:** Titled "Sodium chloride T = 95°C ". The y-axis is "gram" (0 to 240). A bar for "added" is at 31 g, and a bar for "at bottom" is at 0 g. A checkbox "Show numerical value" is present.
- STATUS BAR:** "You have 189 grams of sodium chloride available for use."

Gizmo: Food Chain & Forest Ecosystem

GRADE 8 FCAT 2.0 Science sample test question.

7 Food webs show feeding relationships among different types of organisms. Those organisms each have a specific niche. Which of the following **best** describes a function of decomposers in food webs?

- A. to recycle nutrients into soil
- B. to convert solar energy into food
- C. to provide food for secondary consumers
- D. to compete with secondary consumers for oxygen



Biology 1

END-OF-COURSE ASSESSMENTS

Gizmo: Osmosis

HIGH SCHOOL Biology I EOC sample test question.

Sample Item 1

SC.912.N.1.1

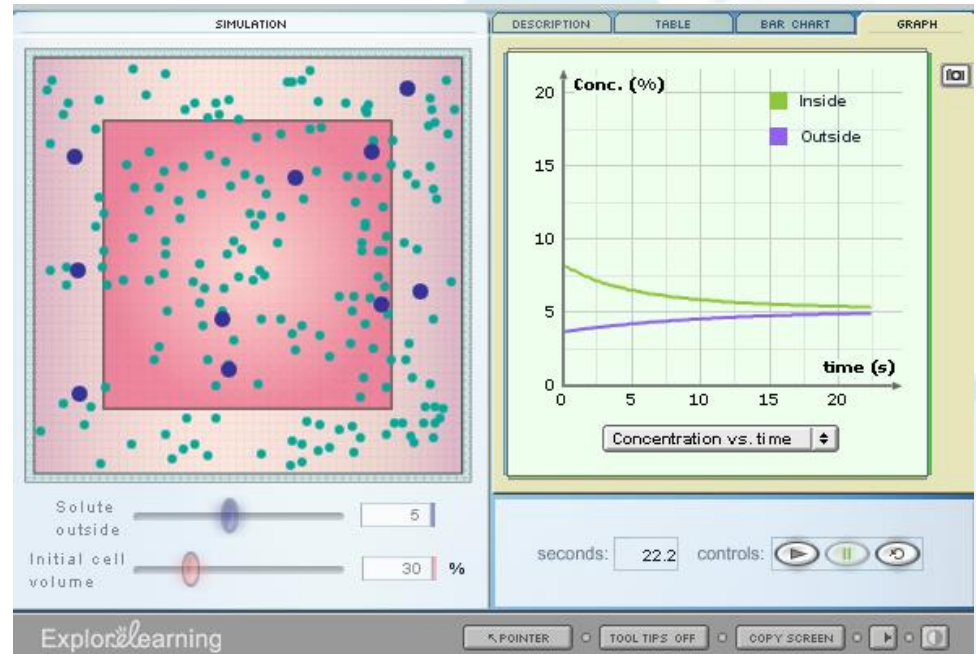
An osmosis investigation was conducted using chicken eggs to represent cells with semipermeable membranes. The mass of each egg was measured to determine how much water diffused into or out of the eggs. The eggs were first soaked in vinegar to dissolve the shell. Each egg was then placed in one of three different solutions for 24 hours. The table below shows the results of the investigation.

OSMOSIS IN CELLS

Solution	Average Mass of Eggs Before Soaking (grams)	Average Mass of Eggs After Soaking (grams)	Difference in Average Mass (grams)	Percent Change in Average Mass
Vinegar (95% water)	71.2	98.6	27.4	+38.5
Corn syrup (5% water)	98.6	64.5	-34.1	-34.6
Distilled water (100% water)	64.5	105.3	40.8	+63.3

Based on this experiment, which of the following should be inferred about cells with semipermeable membranes?

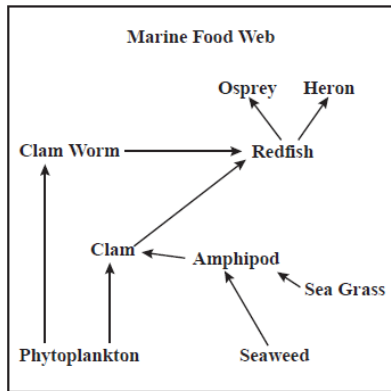
- A. Substances other than water may also cross the cell membrane.
- B. Substances other than water may block pores in the cell membrane.
- ★ C. Water enters the cell when placed in environments of high water concentration.
- D. Water leaves the cell when placed in environments with a low concentration of solutes.



Gizmo: Food Chain & Forest Ecosystem

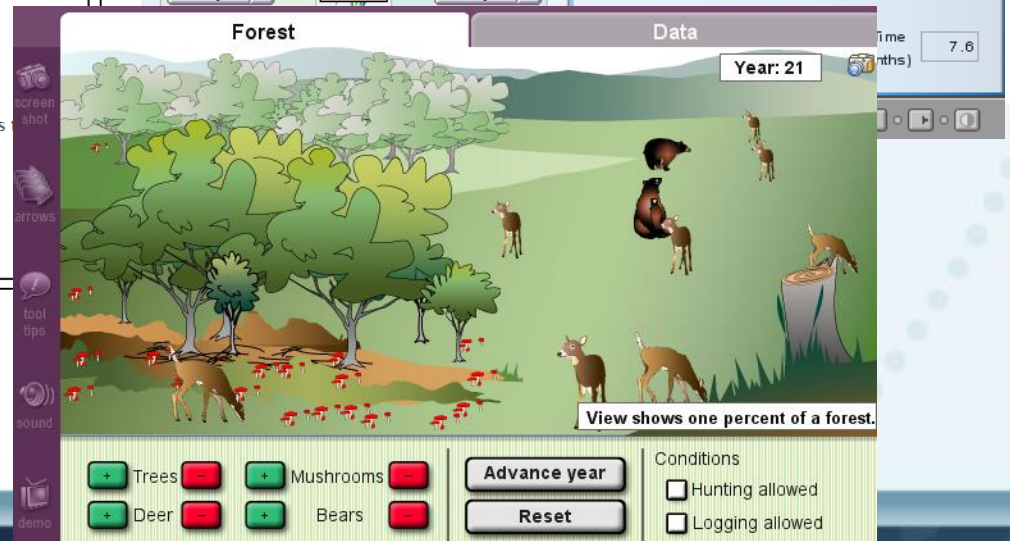
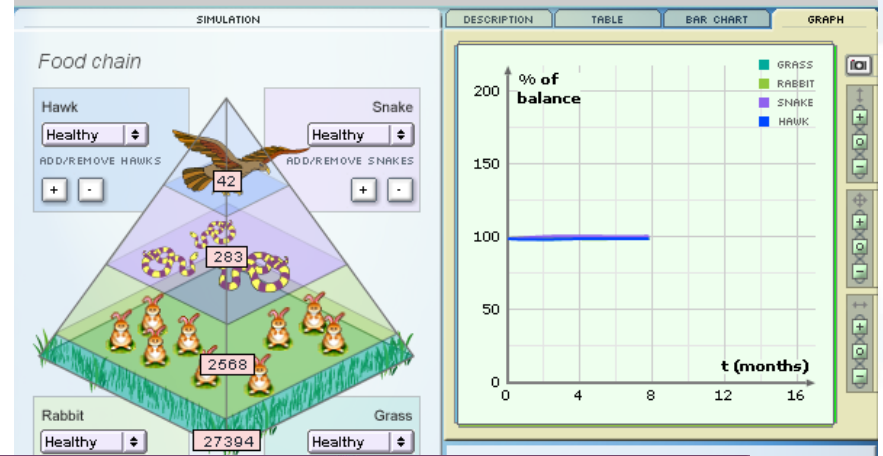
HIGH SCHOOL Biology I EOC sample test question.

A marine food web is shown below.



Which of the following organisms is found in the trophic level with the highest biomass sustains the ecosystem represented by this food web?

- A. Amphipod
- B. Heron
- C. Redfish
- ★ D. Seaweed



Gizmo: Food Chain & Forest Ecosystem

HIGH SCHOOL Biology I EOC sample test question.

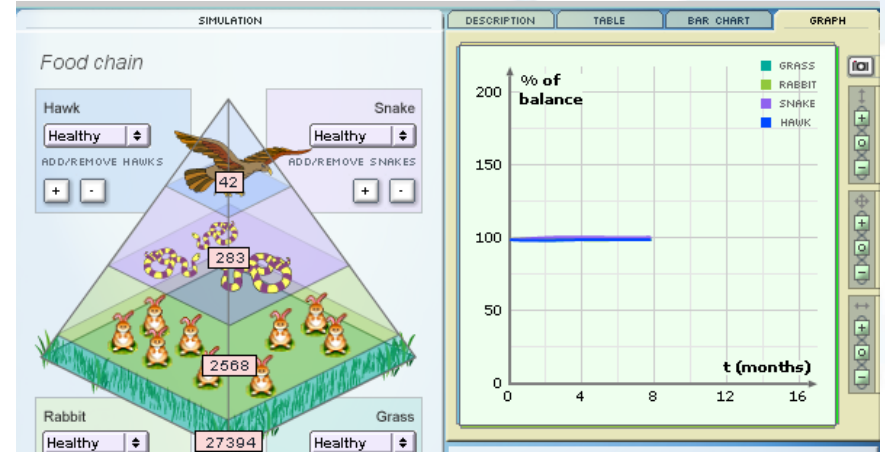
Sample Item 18 SC.912.L.17.9

A team of ecologists observed feeding patterns of several populations in the desert. The energy pyramid shown below depicts the feeding patterns the ecologists observed.

DESERT ENERGY PYRAMID

Which of the following **best** explains the difference in the amount of available energy in trophic levels of the desert ecosystem?

- There is less energy available in the producers because their tissues are less dense than those at higher trophic levels.
- There is more energy available in the second trophic level because less energy is lost for hunting compared to the higher trophic levels.
- There is more available energy in the birds of prey because they have greater mass for storing energy than organisms in lower trophic levels have.
- ★ There is less available energy in the fourth trophic level because of the loss of energy through metabolism in each of the lower trophic levels.



Forest

Data: Year: 21, Time: 7.6 months

View shows one percent of a forest.

Controls: Trees (+/-), Deer (+/-), Mushrooms (+/-), Bears (+/-), Advance year, Reset, Conditions (Hunting allowed, Logging allowed).

Gizmo: Cell Energy Cycle and Photosynthesis

HIGH SCHOOL Biology I EOC sample test question.

Biology 1 End-of-Course Assessment

SC.912.L.14.7

Sample Item 4

SC.912.L.14.7

Terrestrial plants have stomata on the surface of their leaves. A single stoma is surrounded by two guard cells that change shape in response to environmental factors and open or close the stoma. Which of the following **best** explains how the structure of the leaf is used in processes that occur in the plant?

- A. Water enters the plant through the surface of the leaf for transpiration.
- ★ B. Gases for photosynthesis are exchanged through the surface of the leaf.
- C. Energy for cellular reproduction is absorbed through the surface of the leaf.
- D. Carbon dioxide enters the plant through the surface of the leaf for cellular respiration.

Gizmo Status

With this Gizmo you can observe how a plant produces oxygen from water, sunlight, and carbon dioxide.

Intensity of Light: 30%
 Temperature: 30.0 °C
 Carbon dioxide level: 500 ppm
 Oxygen flow: 26.1 mL/h
 White light is being used.

Gizmo: Rainfall and Bird Beaks

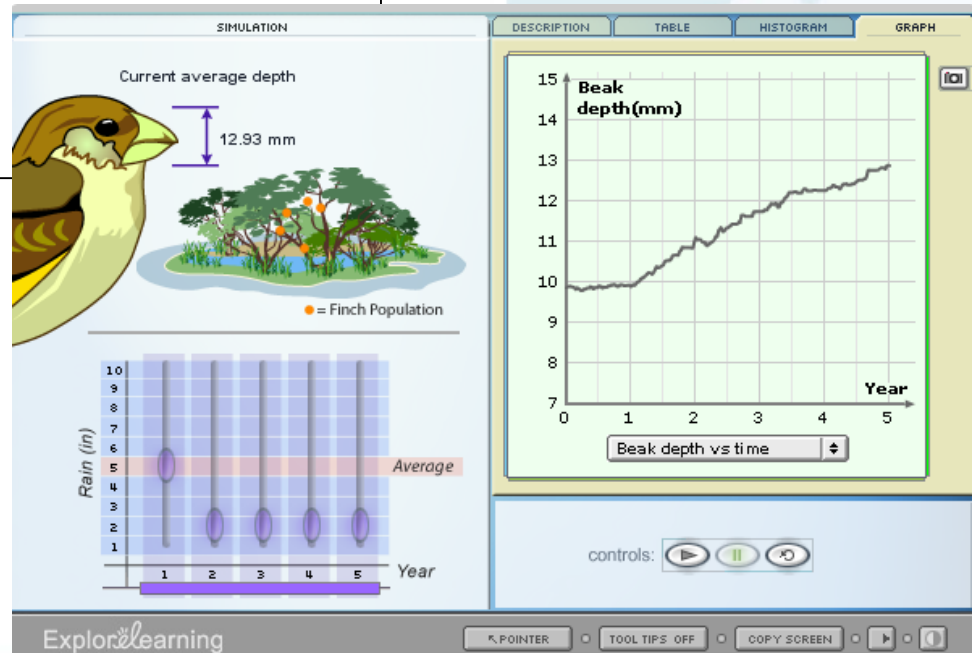
HIGH SCHOOL Biology I EOC sample test question.

Sample Item 11

SC.912.L.15.13

Over time, the climate of an island became drier, which resulted in changes to the populations of various island finch species. Finch populations with a certain beak shape thrived, while those not having that beak shape decreased. Which of the following describes a necessary condition for these changes in the finch populations to occur?

- A. fewer mutations
- ★ B. limited food resources
- C. limited beak variations
- D. overproduction of offspring



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 - [Grade and topic](#)
 - [Textbook](#)

The word "Gizmos" is written in a bold, black, serif font. It is partially enclosed by a blue circular graphic element that is open at the top. An orange square icon with a white lowercase "e" and three small white dots above it is positioned at the top right of the blue circle. The background is white with faint blue mathematical equations and circles.

Gizmos[®]

Simulations that Power
Inquiry and Understanding

The word "Explorēlearning" is written in a white, sans-serif font. The "ē" is stylized in orange with three small white dots above it. A registered trademark symbol (®) is located at the end of the word. The background is dark blue with faint white mathematical equations and circles.

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