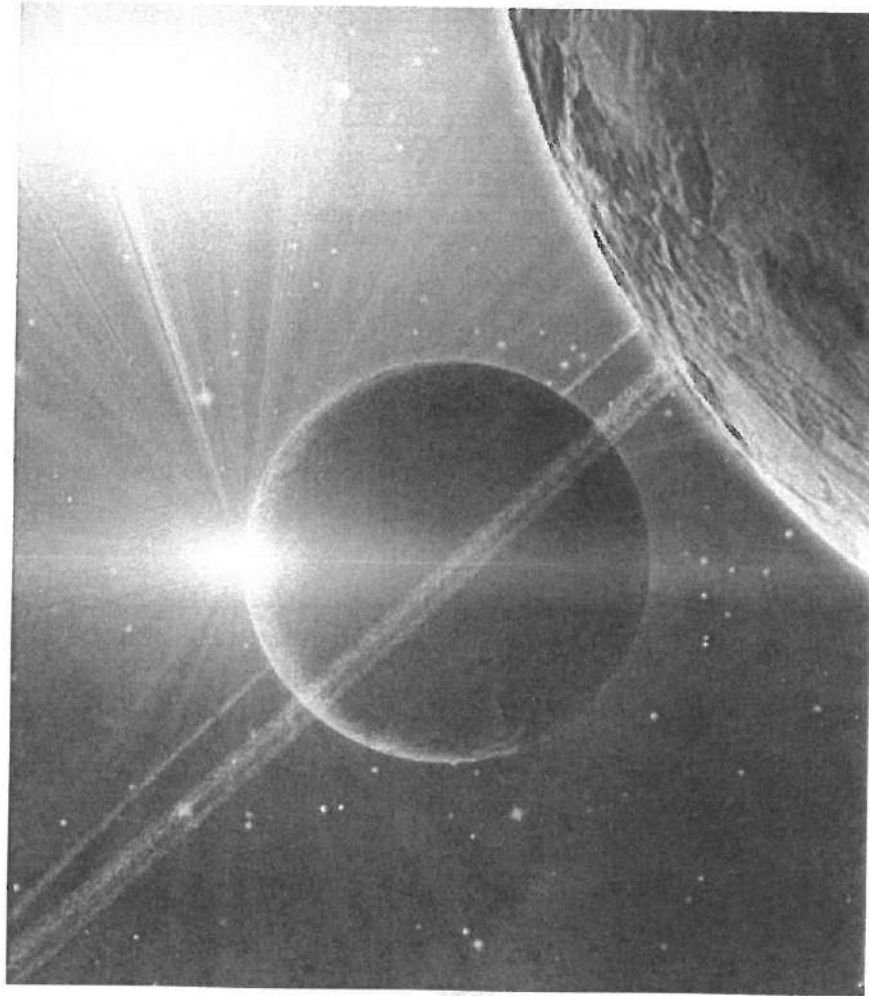


E-day #1

**Ohio's State Test    Grade 5 – Science**  
**Practice Test Items**



1)

Standard, Life Science 1

The table below describes the diet of several organisms that are found in a meadow ecosystem.

Organism	Diet
Songbird	Grasshoppers
Mouse	Seeds, Grasshoppers
Grasshopper	Grass
Fox	Toads, Mice, Snakes, Grasshoppers
Snake	Grasshoppers, Mice, Toads
Toad	Grasshoppers

Which food web shows the correct feeding relationships among these organisms?

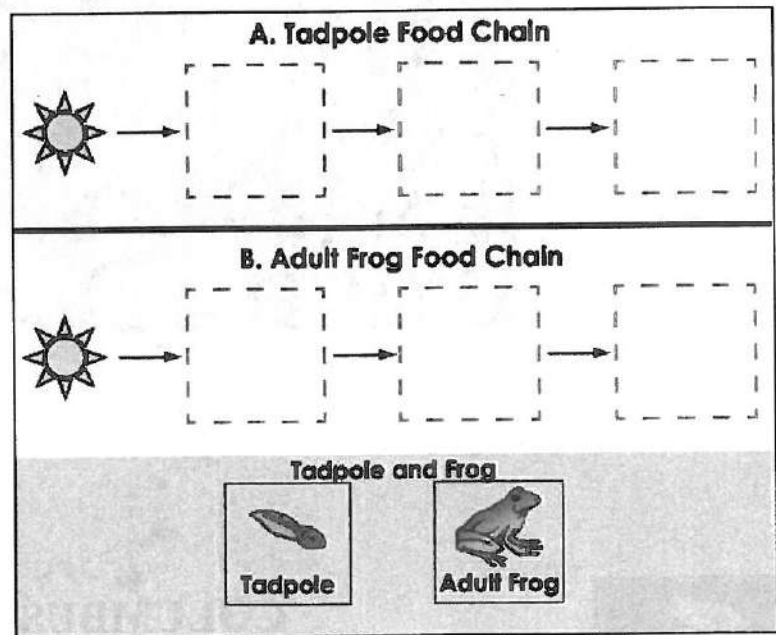
- (A) Grasshopper → Songbird → Mouse → Toad
- (B) Seeds → Toad → Mouse → Fox
- (C) Grass → Grasshopper → Toad → Fox
- (D) Mouse → Songbird → Grass → Snake

2)

Standard, Life Science 1

Tadpoles live in water and eat algae plants, a type of producer. Frogs live on land and in water. They eat insects, a type of consumer.

- A. Move the tadpole to the blank box where it belongs in the tadpole food chain.
- B. Move the frog to the blank box where it belongs in the frog food chain.
- You do not need to fill all the blank boxes.



3)

Standard, Life Science 1

The following question has two parts. First, answer part A. Then, answer part B.

**Part A**

Plants are an important part of an ecosystem.

Which role do plants play in the flow of energy within an ecosystem?

- ☐ A consumers
- ☐ B decomposers
- ☐ C herbivores
- ☐ D producers

**Part B**

Select the two statements that explain the role of plants in an ecosystem.

- ☐ Plants absorb energy from water and minerals in the ground.
- ☐ Plants perform photosynthesis and provide the energy to the ecosystem.
- ☐ Plants make most of their energy during the night so that they can use it during the day.
- ☐ Plants make most of their energy by breaking down food that is produced by other organisms.
- ☐ Plants are organisms that convert the sun's energy into food used for growth and development.

4)

Standard, Life Science 1

Barnacles are small, nonswimming, hard-shelled animals that live in the ocean. They often attach their bodies to the sides of a whale. The whale is not affected by the barnacles' presence, and floating food is made available to barnacles as the whale swims.

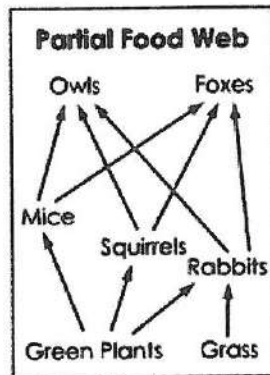
What is the relationship between the whale and the barnacles?

- ☐ A producer-consumer
- ☐ B commensalism
- ☐ C predator-prey
- ☐ D mutualism

5)

## Standard, Life Science 1

A partial food web and a table of the changes in the population of squirrels are shown.



**Estimated Number of Squirrels**

Years	Number of Squirrels
1	270
2	290
3	360
4	500

Select the two effects caused by the change in the squirrel population between Years 1 and 4.

- ☐ The number of mice will increase.
- ☐ The population of foxes will decrease.
- ☐ The number of green plants will decrease.
- ☐ The populations of foxes and owls will increase.
- ☐ The amount of green plants rabbits eat will increase.
- ☐ The competition between owls and foxes will increase.
- ☐ The populations of grass and green plants will stay the same.


6)

# Standard, Life Science 1


The tamarisk plant is an invasive plant species in western states. A scientist investigates different ways to control the tamarisk.

Run the simulation to perform your own investigation on how to control the invasive tamarisk plant. Select how many tamarisk plants to introduce on a river bank. Then select a type of control measure to take, and click Start. The observations and results of your investigation will be shown in a chart.

Tamarisk



Native Plant



Number of Tamarisk Plants Introduced

Control Measures

Number of Tamarisk Plants	Control Measure	Observations and Results

Observe the effects the tamarisk plant has on the ecosystem.

- A. Click on the label(s) that describe the role(s) of the tamarisk plant.
- B. Click on the impact(s) on the ecosystem to show what happens after the introduction of the tamarisk plant.

Role and Impacts of the Tamarisk Plant	
A. Role	B. Impact on Ecosystem
Decomposer	Decreasing chances of drought
Predator	Providing poor habitat for native animals
Consumer	Competition with native plants for resources
Producer	Increasing available water in rivers and streams

7)

## Standard, Life Science 1

A student has to give a presentation on mutualism. In doing research for his presentation, he takes notes on the relationships shown.

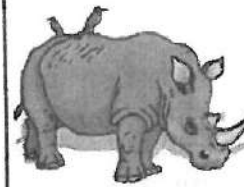
Click on the relationship that the student should use in his presentation as an example of mutualism.

## Barnacles on a Whale



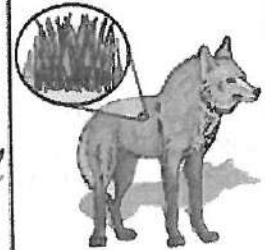
Barnacles are moved through nutrient-rich waters.

## Birds on a Rhinoceros



Birds eat parasites off rhinoceros.

## Fleas on a Wolf



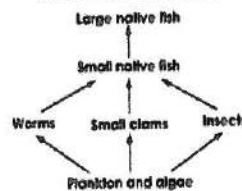
Fleas feed on the wolf's blood and spread disease.

8)

## Standard, Life Science 1

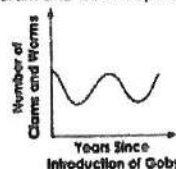
The food web shows how energy flows through part of the Lake Erie ecosystem.

## Lake Erie Food Web Before the Introduction of the Goby

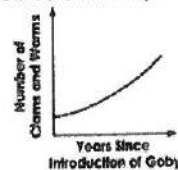


The round goby is a non-native fish species that was accidentally introduced into the lake ecosystem in the 1990s. Gobies eat insects, worms, clams, and the eggs of many native fish. After their introduction, the population of gobies increased quickly. Which graph would be a good prediction of changes resulting from the introduction of gobies?

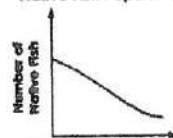
A. Clam and Worm Population



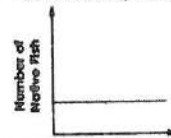
B. Clam and Worm Population



C. Native Fish Population



D. Native Fish Population



9)

## Standard, Life Science 1

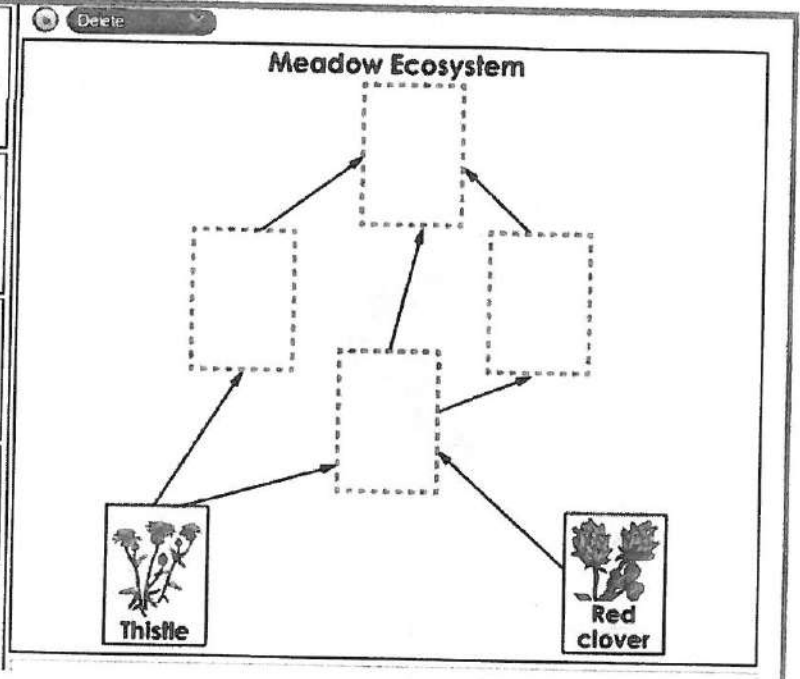
The table shows the foods eaten by animals in a meadow ecosystem.

MeadowEcosystem

Animal	Food Source
Barredowl	Goldfinch, field mouse, rat snake
Goldfinch	Thistle seeds
Fieldmouse	Thistle and clover
Ratsnake	Field mouse

Place the animals in the blank boxes to create a food web of this ecosystem.

- Place only **one** animal in each blank box.



10)

## Standard, Life Science 1

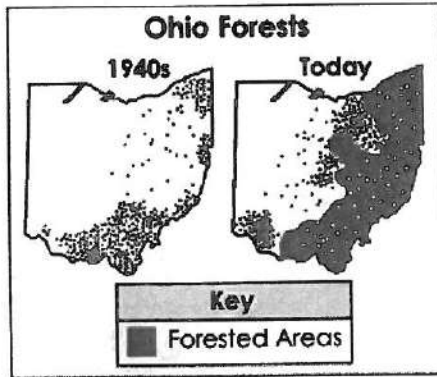
In an experiment, a scientist rubbed a plant's flower with a small brush. Then, the scientist rubbed another plant's flower with the same brush. Later, the scientist observed the offspring of both plants. Which animal behavior has the same result as the scientist's action with the brush?

- (A) a deer eating a flower
- (B) a butterfly drinking nectar
- (C) a beetle eating leaves from a rose bush
- (D) a bird building a nest in a flowering tree

11)

Standard, Life Science 2

Black bears eat nuts from oak, hickory and beech trees. As Ohio's landscape changed from forests to farmlands, the number of black bears also changed. The maps show how scientists have been working to restore Ohio forests over the years.



A. Move arrows into the blank boxes to predict the relationship between the forested areas and the number of black bears from the 1940s to today.

B. Click on a factor in Table 1. Then, click on the factor in Table 2 that receives energy from the first factor you chose in Table 1.

You do not need to use all the factors and arrows.  
There may be more than one correct answer.

↑  
Increase
↑  
Increase
↓  
Decrease
↓  
Decrease

**Relationship**

A.  **Forested areas** results in  **Black bears**

B.

Beech tree
Black bear
Forest soil
Sunlight

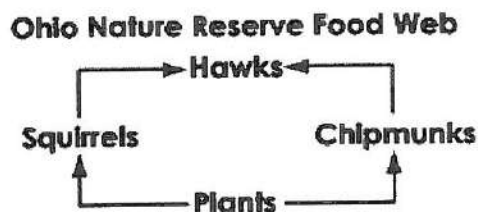
→

Beech tree
Black bear
Forest soil
Sunlight

12)

Standard, Life Science 2

This food web shows some of the organisms in an Ohio nature reserve.



Which statement describes the flow of energy shown in this food web?

- (A) Energy flows directly from hawks to plants.
- (B) Energy flows directly from plants to hawks.
- (C) Energy flows from plants to squirrels and chipmunks.
- (D) Energy flows from hawks to squirrels and chipmunks.

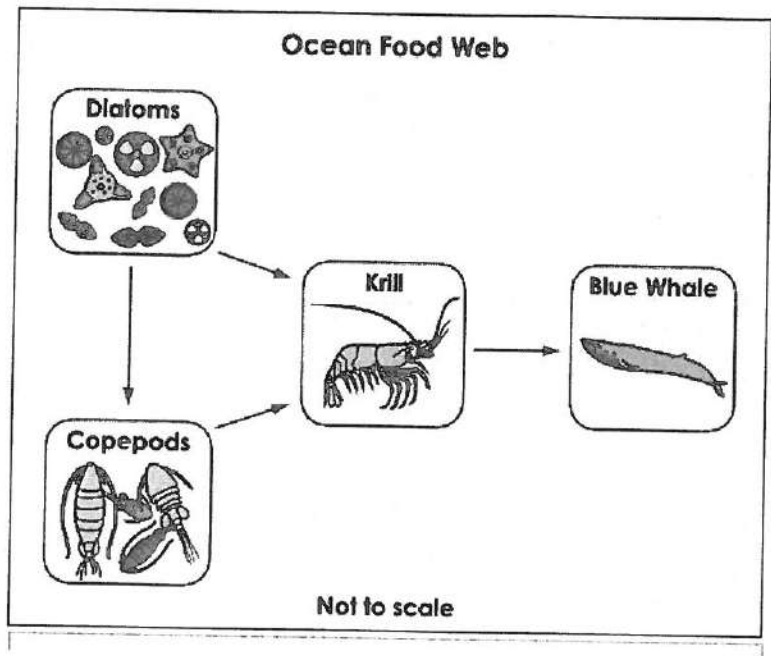


13)

Standard, Life Science 2

The food web shows how blue whales, krill and copepods get their energy.

Click on the two arrows that show energy moving from a producer to a consumer.



14)

Standard, Life Science 2

During the winter months in Ohio, daylight hours are shorter and less energy is available in ecosystems.

Which statement explains why less energy is available in ecosystems during the winter months?

- Ⓐ Consumers hunt less prey.
- Ⓑ Producers make less food.
- Ⓒ Consumers are less active.
- Ⓓ Decomposers break down less waste.

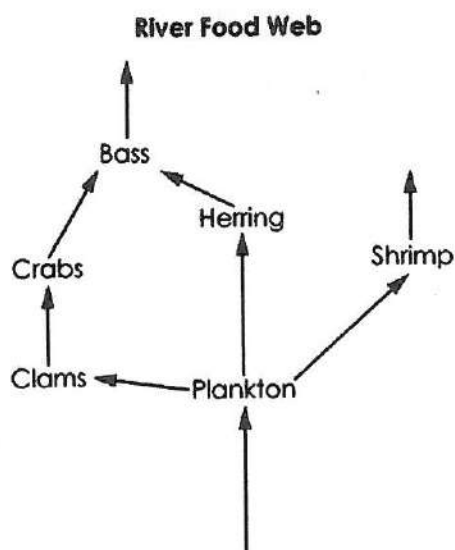
15)

Standard, Life Science 2

A food web of a Hudson River ecosystem is shown. It includes plankton (tiny photosynthetic organisms), shrimp, herring, and bass (types of fish), clams, and crabs.

Zebra mussels (a type of clam) are introduced into this ecosystem. Zebra mussels get their energy from plankton. Zebra mussels do not provide energy to any animals in the ecosystem.

Update the food web by clicking on the red arrow to show where the zebra mussel will be found.



16)

Standard, Life Science 2

Which process makes sunlight energy available to all organisms in an ecosystem?

**(A)** decomposition

**(B)** digestion

**(C)** photosynthesis

**(D)** reproduction

17)

Standard, Life Science 2

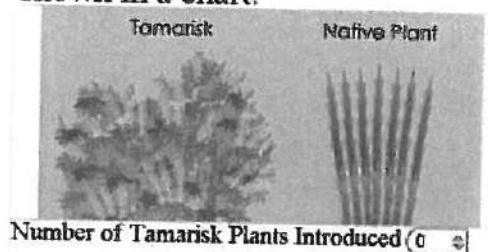
Select the boxes to identify which organism, if any, performs each energy action described in the table.

	Fungi	Grass	Rabbit	None
Uses dead matter for energy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uses energy gained from plants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uses energy directly from water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Uses energy directly from the sun	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18)

The tamarisk plant is an invasive plant species in western states. A scientist investigates different ways to control the tamarisk.

Run the simulation to perform your own investigation on how to control the invasive tamarisk plant. Select how many tamarisk plants to introduce on a river bank. Then select a type of control measure to take, and click Start. The observations and results of your investigation will be shown in a chart.



Control Measures None

Start

Clear All Rows

Number of Tamarisk Plants	Control Measure	Observations and Results
---------------------------	-----------------	--------------------------

## Standard, Life Science 2

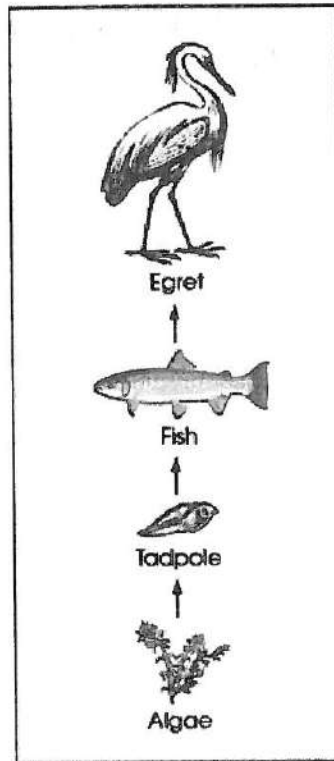
Investigate the effect the different control measures have on the river bank ecosystem.

Identify the control measure that limits the invasive tamarisk plants with the least impact on the entire ecosystem. Then, provide an observation that supports your identification.

Type your answer in the space provided.

A student studies the flow of energy among organisms in an ecosystem. She draws a picture of a food chain in a pond ecosystem, as shown.

Pond Food Chain



What type of organism is the egret in the food chain?

- (A) carnivore
- (B) decomposer
- (C) herbivore
- (D) producer