Name: _____ Period: _____

BIOLOGY
Constructed Responses

Materials contained in this packet were taken from the Maryland State Department of Education found at http://www.mdk12.org

June 2007

Prince George's County Public Schools
PGIN# 7690-3516

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NOTE TO TEACHER: The "Biology Constructed Responses" is part of the biology curriculum. The Maryland State Department of Education requires that student enrolled in Biology be able to express their knowledge of key concepts in the form of constructed responses. Please use this booklet in alignment with the PGCPS Biology Curriculum Framework Progress Guide (see weekly guide and daily lesson plans).

NOTE TO STUDENT: The "Biology Constructed Responses" is part of the biology curriculum. The Maryland State Department of Education requires that student enrolled in Biology be able to express their knowledge of key concepts in the form of constructed responses. This booklet was created to provide you with opportunities to practice writing constructed responses in preparation for the Biology High School Assessment. Attaining a passing score on the Biology HSA is a graduation requirement in the state of Maryland.

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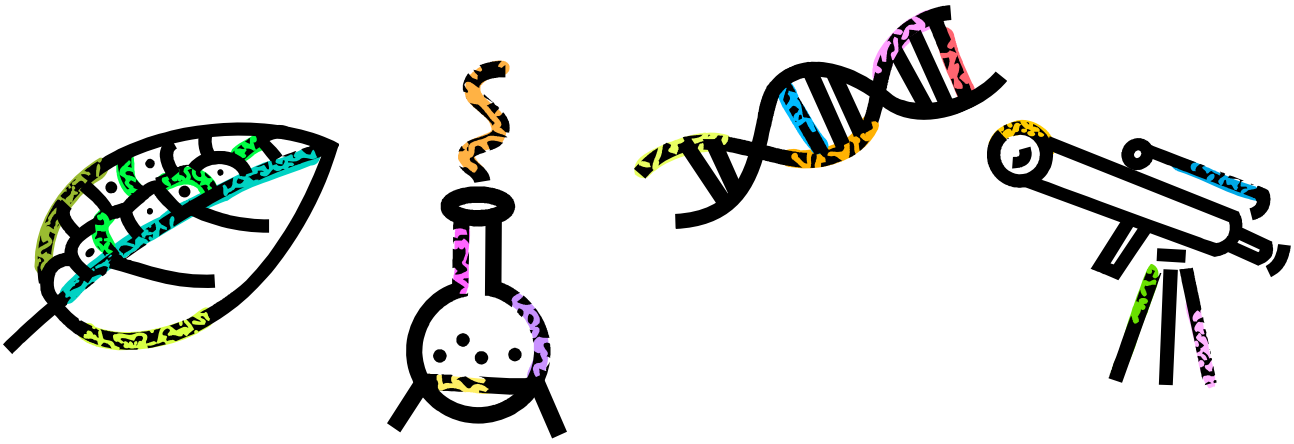
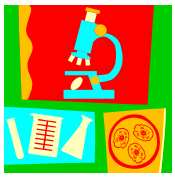




Scientific Method:

1. The concentration of salt in water affects the hatching of brine shrimp eggs. A scientist wants to determine the best conditions in which to hatch the shrimp eggs. In a laboratory, brine shrimp will grow at room temperature in small glass containers of salt water.

Describe the steps of a controlled experiment that would determine the best saltwater concentration in which to hatch brine shrimp eggs. In your response, be sure to indicate:

- The materials that will be used
- The type of data that will be collected
- How the data will be used to answer questions about the salt requirements of brine shrimp. (2000)

2. Gibberellic acid (GA) is a hormone that affects the growth of plants. A student predicted that spraying a gibberellic acid solution on corn plants would increase their rate of growth. To test this theory, he planted a corn plant and sprayed the same amount of gibberellic acid solution on it every day for one week. At the end of the week, he found that the corn plant had grown seven centimeters. Based on this observation, he concluded that gibberellic acid had caused the plant to grow faster.

- What was wrong with the student's conclusion?
- Describe how he should have designed his investigation in order to get useful results. (2001)

3. Gibberellic acid is a plant hormone that affects the growth of plants.
Describe a controlled experiment a student could perform to test the effect of gibberellic acid on the height of pea plants, over a three-week period. Be sure to include:

- All materials and equipment
- The kind of data that will be collected
- The experimental procedure (2002)

4. Researchers tested a new product designed to remove mildew from household surfaces. They gave free samples of the product to 100 different households. They collected these data: 70 households reported that the product was effective in removing mildew; 30 households reported that the product was not effective in removing mildew. From these data, the researchers concluded that the product was 70% effective in removing mildew from household surfaces.

- Why is this a misleading conclusion?
- In your response, discuss how this experiment could be designed to give more reliable results. (2003)

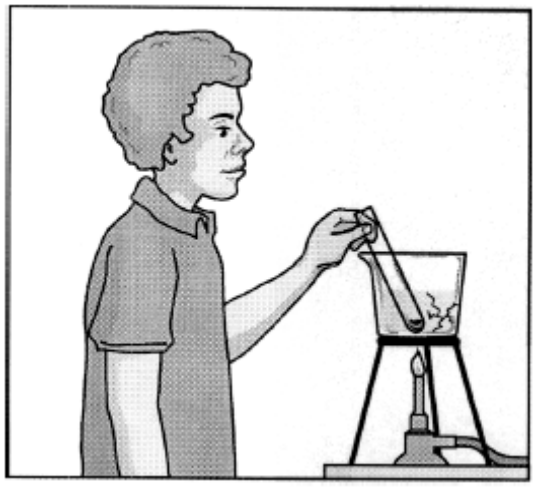
5. Researchers have found that elephants can communicate with each other using infrasound, over a distance of two and one half miles. The sounds that elephants hear may travel even farther.

Design an experiment that would determine the maximum distance from which elephants can hear infrasound.

Be sure to include:

- A hypothesis
- A materials list
- The specific steps to follow in the experiment
- The method of collecting data (2004)

6. Rafael was given an assignment to determine how the appearance of frog blood cells change when they are placed in distilled water. He is using an incorrect setup to perform his investigation. His laboratory setup is shown in the figure below.



Critique Rafael's setup shown in the above figure. In your response, be sure to include

- Any unsafe laboratory equipment and procedures shown in the figure
- A description of the materials and safe setup for the correct investigation
- An explanation of why it is important to follow the correct procedures in the laboratory
- Any safety precautions you have used during an investigation in biology; provide specific details and the reasons for taking the precautions (2004)

7. A student reads an advertisement from a fertilizer company. The advertisement claims their fertilizer increases the growth of tomato plants by 25%. The student decides to perform an experiment to test this claim. She performs the following procedure.

1. Choose three similar-sized tomato plants.
2. Plant each tomato plant in a small pot.
3. Place all three small pots into one container and place on a window sill.
4. Add fertilizer mixed with water to Plants 1 and 2.
5. Add only water to Plant 3.
6. Record the heights of the three plants after 4 weeks.

The student's results are shown in the table below.

THE EFFECT OF FERTILIZER ON TOMATO PLANTS

Plant	Height (centimeters)
1	23
2	20
3	20

Analyze the student's experiment to determine if it supports the claims made in the fertilizer company's advertisement. In your response, be sure to include

- a description of the data needed to support the company's claim
- an explanation of the results of the student's experiment
- an evaluation of the student's experiment
- a description of any changes you would make to the experiment; explain your answer (2005)

8. A student wants to know if glucose is present in an unknown liquid. She places five milliliters of the liquid in a test tube and adds five drops of Benedict solution. She transfers the test tube to a beaker of boiling water for five minutes, then removes it and observes changes in the color of the solution. What other equipment does the student need to perform this experiment safely? Use your knowledge of laboratory safety to explain why she needs this equipment. (2002)

9. Students studied a species of fish. They wanted to find out if these fish grow faster in warmer water. The students designed an experiment to determine how different water temperatures affect the growth of the fish.

They placed one fish in a tank at 26°C and another fish in a tank at 22°C. The fish were fed the same amount of food during the experiment. The mass of each fish was recorded at the beginning and at the end of the experiment. The data the students collected are shown in the table below.

EFFECTS OF WATER TEMPERATURE ON THE GROWTH OF FISH

Temperature (°C)	Starting Mass (g)	Final Mass (g)	Percent Change
26	3.68	7.84	113%
22	6.80	9.09	34%

Analyze the procedure and the data from the experiment. In your response, be sure to

- include the hypothesis that the students were most likely investigating
- explain whether their data supports this hypothesis
- describe how other variables would affect the outcome of the results
- explain how the experiment could be redesigned to gather more reliable data (2006)

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Chemistry

10. The table below lists enzymes that function in different locations in the human body, and the normal pH and temperature ranges of these locations.

ENZYMES IN THE HUMAN BODY

Location of enzyme	Enzyme	pH ranges of location	Temperature (°C) ranges of location
Mouth	Salivary amylase	6.0 - 7.0	36.7 - 37.0
Stomach	Pepsin	2.0 - 3.0	37.3 - 37.6
Small intestine	pancreatic amylase, trypsin, lipase	7.5 - 9.0	37.3 - 37.6

Use your understanding of the structure and function of enzymes to

- predict how the activity of pepsin will change after it moves from the stomach to the small intestine
- explain your prediction using data from the table
- describe how changes in pH and temperature affect enzyme activity
- predict how a fever of 40°C would affect enzyme activity (2006)

*Note: BCR # 18 can also be used for this section.

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Cell Structure and Function:

11. Compare a bacterial cell and a human body cell. Include in your response
- How they are similar and different in structure
- How they are classified (2001)

12. A student cut three identical slices from a potato. She determined the mass of each slice and placed them into labeled beakers. She then added a different solution to each beaker. After 20 minutes, she removed each potato slice from its solution, dried it with a paper towel, and determined its mass. Results of this experiment are shown in the table below.

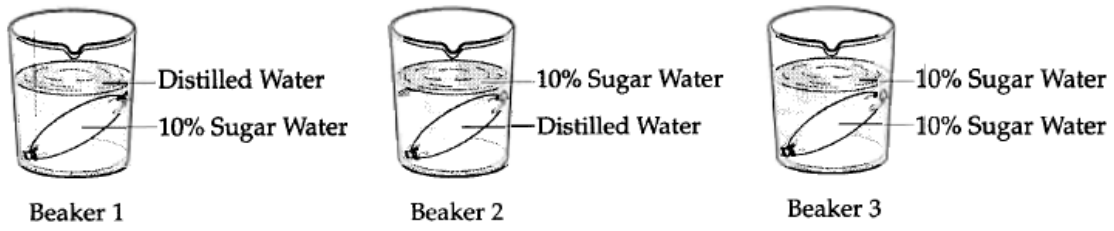
The Effect of Different Solutions on the Mass
Of Potato Slices

Beaker	Solution	Change in Mass
1	Distilled water	Gained 3 grams
2	5% salt solution	Lost 0.3 grams
3	15% salt solution	Lost 4.6 grams

Name the process that caused these changes in mass. Explain why each potato slice had a different mass after 20 minutes. (2002)

13. A student is setting up an experiment using a type of bag that is permeable to water, but not to sugar. She will fill and weigh three bags and place each bag into a different beaker. The diagram below shows the contents of the bags and the beakers at the start of the experiment.

INITIAL CONTENTS OF BEAKERS AND TUBES



Predict whether after 15 minutes each bag will weigh less, the same, or more than it did at the beginning of the experiment. Provide reasons for each of your predictions. (2003)

14. All organisms must be able to exchange chemical substances between their cells and their environment. Some organisms are unicellular and others are multicellular. These organisms have different strategies to obtain and use these chemical substances.

- What chemical substances must be exchanged between each organism and its environment?
- Describe the processes that cause these chemical substances to move into and out of cells.
- Describe the role of the cell membrane in the exchange of materials in both types of organisms.
- Describe the role of body systems in the exchange of materials in a multicellular organism. (2004)

15. In a freshwater pond, single-celled organisms may have a special structure called a *contractile vacuole*, which is used to pump water out of the cell. Explain why this structure is necessary for maintaining a water balance between the cell and its environment. (2001)

16. How do living systems control the movement of materials into and out of cells?
In your response, be sure to:

- identify the cell structures and body systems involved
- describe the functions of the cell structures and body systems involved
- identify and describe the processes responsible for the movement of materials into and out of cells (2006)

*Note: BCR #17 can also be used in this section
BCR #43 can also be used in this section

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Photosynthesis and Respiration:

17. Compare the function of chloroplasts and mitochondria in a cell. In your response, include:

- The name of the process that occurs in each organelle
- The products of each process
- The importance of each process to the cell (2002)

18. Cardinals are birds that spend the winter in Maryland. Many people feed them sunflower seeds during the winter months. Some of the carbohydrates in the cardinal's diet come from these seeds. Describe:

- The building blocks of carbohydrates
- How the sunflowers produce carbohydrates
- How carbohydrates are used by living organisms (2004).

19. How is carbon related to the flow of energy between the environment and organisms?

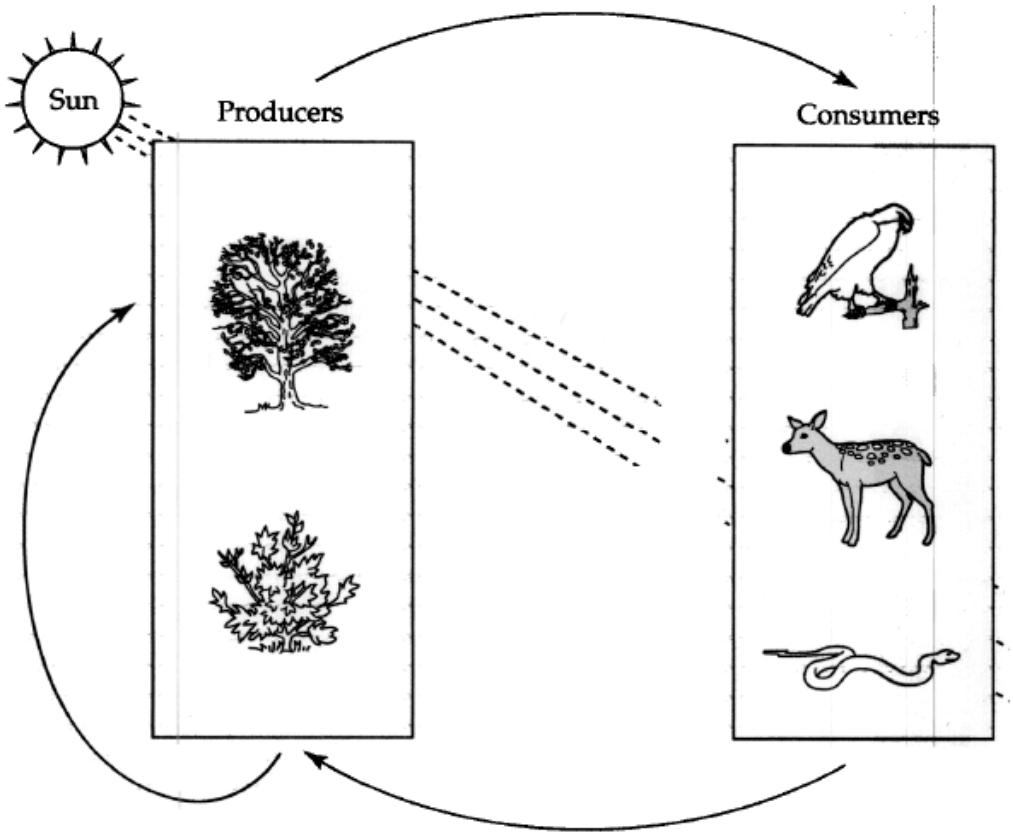
- Name the carbon compound that is exchanged between plants and their environment.
- Describe how plants use carbon from the atmosphere to create more complex molecules.
- Describe how animals that eat plants change these molecules and return carbon to the atmosphere. (2005)

20. The sun is the primary source of energy in most ecosystems.

Describe the similarities and differences between the processes of photosynthesis and respiration as they occur within an ecosystem. Include in your response:

- The starting chemicals and final products of both processes
- The general flow of energy within the ecosystem
- (You may include diagrams) (2000)

21. The arrows in the diagram below show how energy and matter flow between organisms.



Describe how producers and consumers exchange energy and matter. In your response:

- Name and describe the chemical process producers use and the chemical process consumers use to contribute to the exchange.
- Identify the products of each process, and explain how these products are used in the exchange. (2001)

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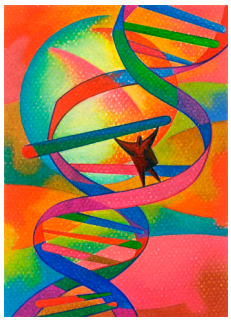


Genetics

22. In a pea plant, the allele for purple flowers (P) is dominant over the allele for white flowers (p). A cross between two purple-flowered plants resulted in both purple-flowered and white-flowered offspring, as shown in the table below.

Results of Pea Plant Cross

Flower Color	Number of Plants
purple	103
White	35

In the space provided, do the following:

- Draw a Punnett square that shows the cross between the two purple-flowered parent plants describe above. When writing the allele pairings, underline all lowercase letters (p).
- Fill in the genotypes of the offspring on the Punnett square.
- Make a key to indicate which genotype produces which flower color.
- Give the ratio of flower colors that can be expected from the cross.
- Explain how the data in the table and in the Punnett square helped you determine the ratio. (2000)

23. A genetic disorder is sex-linked and is caused by a recessive allele (e). The allele for the unaffected condition (E) is dominant. A woman who is a carrier of this disorder marries an unaffected man. The couple would like to have a child, but they are concerned that their child will inherit the disorder.

Using this example,

- Construct a Punnett square with the genotypes of the woman and the man, and the possible genotypes of their child
- Identify the probability that the child will inherit the disorder
- Identify the probability that the child will not inherit the recessive allele (e)
- Explain the pattern of inheritance of a sex-linked trait (2002)

24. Galactosemia is an inherited disorder in humans. A person with the disorder cannot digest the sugars in milk. The allele for normal digestion (G) is dominant; the allele for galactosemia (g) is recessive.

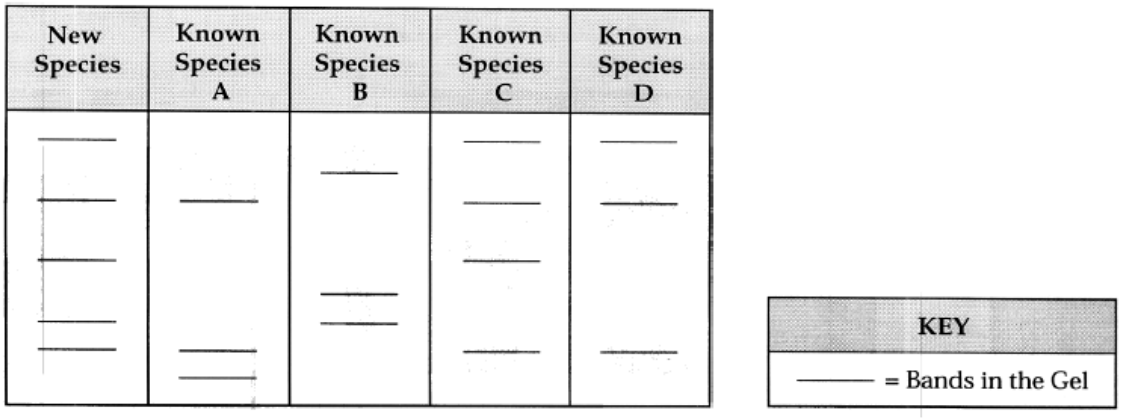
A female who is heterozygous for the galactosemia trait and a male who has galactosemia have a child.

Describe how this disorder could have been passed on in the family. In your response, be sure to:

- identify the genotype of the father
- complete a Punnett square to show the possible genotypes and phenotypes of the child
- describe the probability that the child will inherit galactosemia
- describe all the possible genotypes and phenotypes of the father's parents; explain your answer (2005)

25. Scientists discovered a new species of fish. Using gel electrophoresis, they analyzed samples of DNA from the new species and from four known fish species. The figure below shows the bands of fish DNA from the gel electrophoresis.

GEL ELECTROPHORESIS RESULTS FROM FIVE SPECIES OF FISH



Use the results of the gel electrophoresis to:

- Identify which of the four known species is most closely related to the newly discovered species of fish
- Explain how the relatedness of the fish species can be determined by examining where the bands are located in the electrophoresis gel (2002)

26. The length of a dog's tail is an inherited trait. The allele for short tails is dominant (T) over the allele for long tails (*t*). A dog breeder mates two short-tailed dogs (parents). One parent is homozygous and the other is heterozygous for this trait. A litter of twelve puppies, all with short tails, is produced (first generation). The breeder mates one of the first generation dogs with a short-tailed dog from another litter. A litter of ten puppies is produced (second generation). The breeder is surprised when one of the second generation puppies has a long tail.

Describe the genetic make-up of the parents and puppies that produced this inheritance pattern. In your response, be sure to

- identify the genotype of the parents
- use a Punnett square to show the possible genotypes of the first generation puppies
- use a Punnett square to show the possible genotypes of the second generation puppies
- identify the genotypic and phenotypic ratios of the first and second generation puppies
- explain how a long-tailed dog can suddenly appear when all the other dog's were short-tailed (2006).

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DNA and Protein Synthesis:

27. Even though DNA and messenger RNA share many characteristics, they are different in both structure and function.

Describe how DNA and messenger RNA are different. Include in your response how they differ in:

- Location in the cell
- Size
- Function
- Structure (2001)

28. Name the different types of RNA found in the cytoplasm of cells.
Explain the role of each in protein synthesis. (2003)

29. Hemoglobin, a protein found in red blood cells, carries oxygen. Abnormal hemoglobin cannot carry as much oxygen as normal hemoglobin. The sequences below show sections of the DNA sequence that produce both the normal and abnormal types of hemoglobin.

SECTION OF GENE FOR HEMOGLOBIN

Normal DNA sequence:	GGA	CTC	CTC
Abnormal DNA sequence:	GGA	CAC	CTC

MESSENGER RNA CODON TABLE

Codon	Amino Acid
GUG	Valine
CAC	Histidine
CUC	Leucine
ACU	Threonine
CCU	Proline
GAC	Glutamic acid

- Write the messenger RNA sequences that would be produced from the normal and abnormal DNA sequences shown above.
- Using the codon table, write the amino acid sequences produced from the DNA for normal and abnormal hemoglobin.
- Beginning with DNA, describe the process that forms proteins such as hemoglobin (2006).

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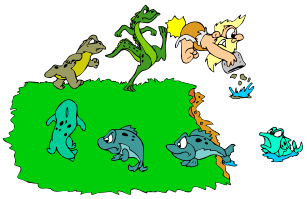
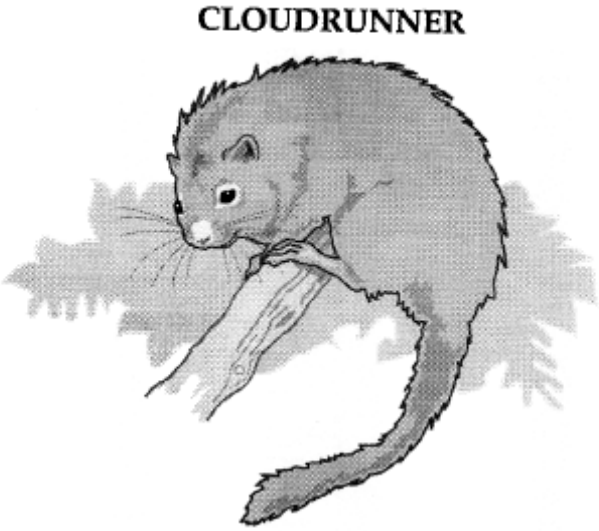


Evolution:

30. One of the birds found on the Galapagos Islands is the medium ground finch. These birds prefer to eat small seeds, which are easier to eat than large seeds. However, when food is scarce, such as during a drought, some of the birds can eat larger seeds. The ability to crush and eat larger seeds is related to beak thickness, an inherited characteristic. Birds with thicker beaks are able to crush large seeds more easily.

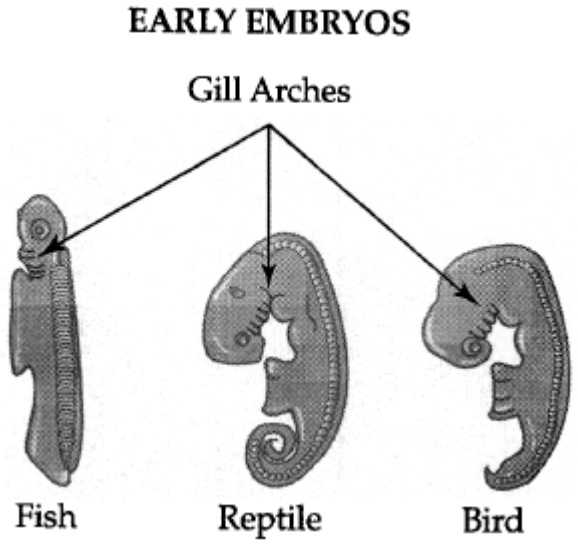
- Describe the changes that would occur in the medium ground finch population during a long period of drought when food is scarce.
- Explain how this set of changes is an example of the process of natural selection. (2000)

31. Biologists have discovered an animal called a cloudrunner, shown in the figure below.



Biologists are now trying to determine the cloudrunner's evolutionary relationship to other animals.
What kinds of evidence and scientific techniques could the biologists use to determine the evolutionary relationship of the cloudrunner to other animals?
How does this evidence demonstrate evolutionary relationships between the cloudrunner and other animals? (2003)

32. The diagram below shows the early embryos of a fish, a reptile, and a bird. The embryos of these organisms are similar in structure and appearance.



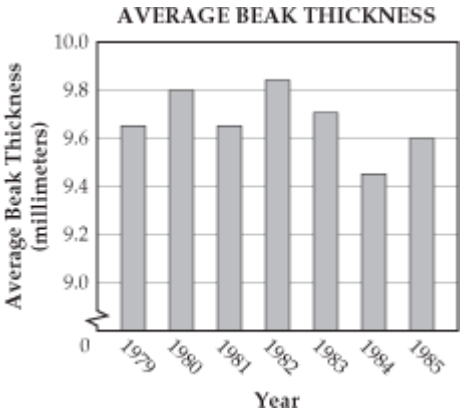
- What other evidence do you see that could be used to determine relatedness?
- Explain what would provide the most reliable evidence that two organisms are related.
- What evidence in adult fish, reptiles, and birds would show relatedness?

.

33. A species of birds lives on an island. The thickness of the birds' beaks varies within the population. The birds feed mainly on seeds from plants. Birds with thinner beaks can eat only small seeds. Only birds with thicker beaks can crush and eat large seeds.

There are many small seeds during years with more rain. During dry years, there are very few small seeds and many large seeds. The large seeds are harder to crush than small seeds.

The graph below shows the average beak thickness in the bird population from 1979 to 1985: 1980 and 1982 were dry years; 1984 was a wet year; 1979, 1981, 1983, and 1985 received normal rainfall.



- Explain why the average beak thickness changed between wet and dry years.
- Explain how beak thickness would have changed during the next ten years, 1986 to 1996, if these years were wet years.
- Name the process that led to this change (2006).

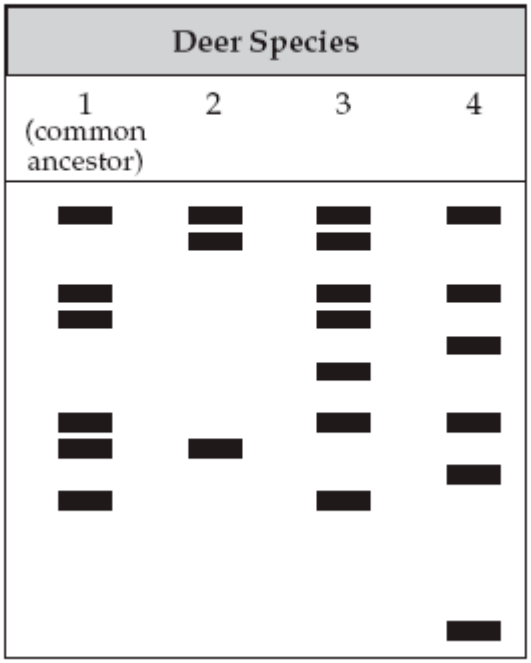
34. Scientists are studying how four species of deer are related. The scientists believe that Species 1 is the common ancestor. The four species have some traits in common. They also have traits that are unique to their species.

Scientists used the process of gel electrophoresis to study the relatedness of the four deer species. The results of their gel electrophoresis study are shown below.

Describe how three species of deer evolved from the common ancestor. In your response, be sure to:

- identify which species is most closely related to the common ancestor; explain your answer using the results of their gel electrophoresis
- identify and describe the process that leads to the development of different species
- explain what factors affect this process in the deer species (2005)

ELECTROPHORESIS GEL
OF DEER SPECIES



*Note: BCR #25 can also be used in this section

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Ecology:

35. A lichen is comprised of a fungus and an alga growing together. The fungus provides a protective structure for the alga, and the alga provides food and other nutrients for the fungus. As part of the lichen, the alga is able to live in dry environments that it would not normally be able to inhabit. Their relationship allows them to live in some of the harshest environments in the world.

When environmental conditions are mild, the alga does not need the protective structure of the fungus to survive. The alga grows slower with the fungus than it would alone. This relationship between the alga and fungus can be described as either mutualism or parasitism.

Describe the similarities and differences between mutualism and parasitism. In your response, be sure to include

- Why lichens can be examples of both types of relationships
- Other examples of mutualism or parasitism (2003)

36. The rain forests of South America are rapidly being destroyed. They are cut for lumber or burned to make land available for raising cattle or growing crops.
What are the negative effects of this destruction on the global environment as well as on the local environment? (2003)

Read the following passage and then answer question #37.

The number of sea otters living along Alaska's Aleutian Islands has fallen to 10% of what it was a decade ago. The investigation into what is happening to this population is revealing a great deal of information about the complex nature of food webs. It is also showing how fragile the links in a food web can be.

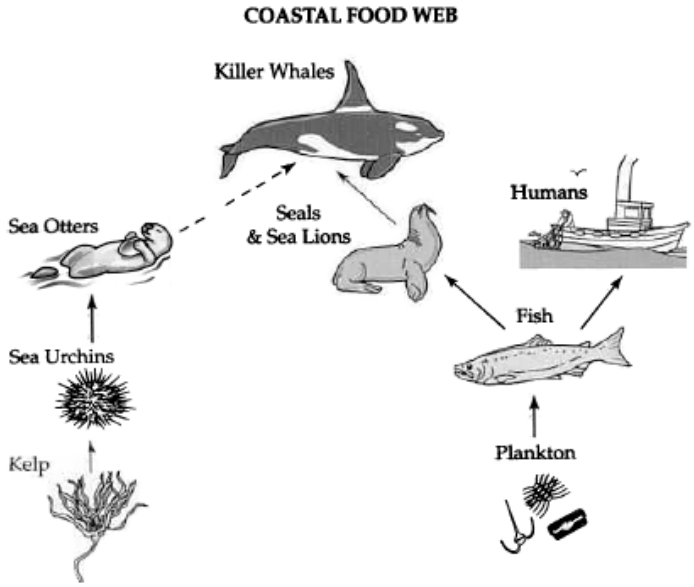
The immediate cause of the sea otters' decline seems to be predation by killer whales, which are turning to sea otters as a food source. James Estes, a University of California marine ecologist, first witnessed a killer whale eating a sea otter in 1991. Since then, a dozen such attacks have been reported. Estes suspected that these attacks were ultimately caused by disruption of the marine food web.

Many fish populations have declined dramatically, and species that marine mammals feed upon have been hit especially hard. The cause of this decline is not entirely understood, but it is thought to be due to a combination of over fishing, warming ocean temperatures, and other factors. Killer whales normally eat sea lions and harbor seals, but with local fish populations so low, these seal populations have rapidly declined. This has caused killer whales to resort to a new food source, the smaller and less nutritious, sea otter.

This decline in the sea otter population has disrupted much of the coastal ecosystem along the Aleutian Islands. Sea otters prey upon sea urchins, which, in turn, feed upon kelp, a type of large seaweed that is abundant in many coastal ecosystems. Kelp beds provide protection for many species of fish and other small animals, and are an important basis of the coastal food web.

In Estes' view, these changes are "an ecological chain reaction," with events that occur far out at sea causing massive changes to the coastal ecosystem.

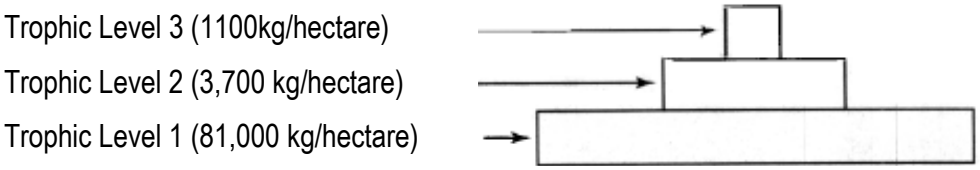
37. A plan has been suggested to help preserve the sea otter population in the Alaskan coastal food web, shown below. This plan will reduce the number of fish that commercial fishing boats can catch from the coastal food web.



- Describe how the plan will affect the population of sea otters.
- Discuss the advantages and disadvantages of the plan with respect to
    1. Animal and kelp populations
    2. Commercial fishing (2001)

38. A team of scientists conducted a study of a wetland. Using samples collected from the wetland, the scientists estimated the total biomass at each trophic level. Their data are shown below.

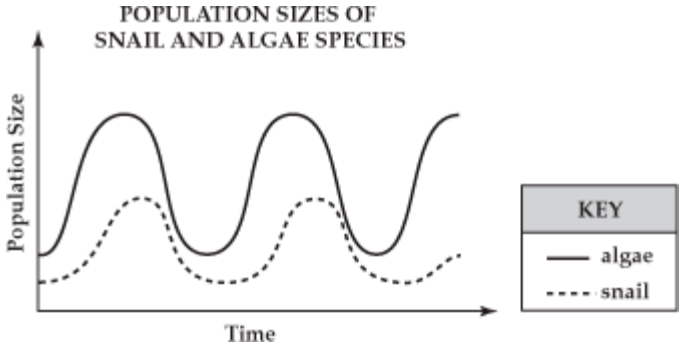
Biomass Sample from a Wetland



Explain the relationship between trophic levels and biomass. In your response, be sure to include:

- The roles of the organisms found at the different trophic levels
- How each trophic level obtains energy
- Why the available energy changes at each level
- Why the amount of mass differs at each of the trophic levels (2004)

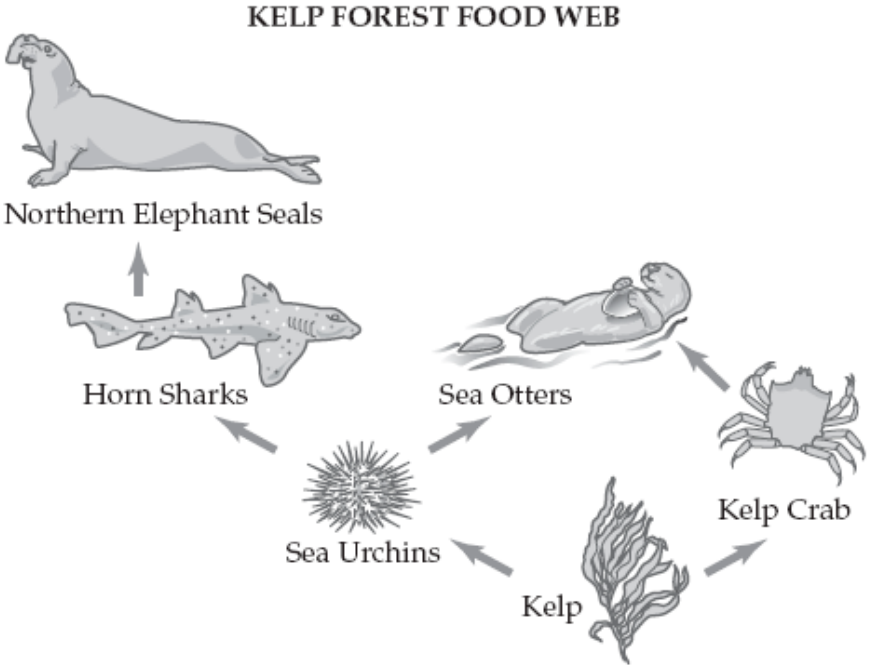
39. Biologists conducted a study on the population sizes of a species of snail and a species of algae found in a lake ecosystem. The results of their study are shown in the graph below.



Based on the data in the graph, explain the <u>most likely</u> relationship between the two species. In your response, be sure to

- identify the ecological role of the snails and the algae
- identify the trophic level each species occupies
- explain the ecological factors that may affect the population size of the two species
- explain how both populations would be affected if a landfill for garbage were built on the land surrounding the lake (2006).

40. A population of sea urchins in a kelp forest ecosystem is being over fished. A team of students believe that a decline in the number of sea urchins will affect the organisms in the kelp forest ecosystem. The kelp forest food web below shows the relationships among the organisms in the kelp forest ecosystem.



The students believe that the kelp crab population will decrease if the sea urchin population decreases. Use the kelp forest food web to support or refute the students' conclusion. In your response, be sure to:

- describe the roles of the kelp crab, sea otter, and sea urchin in the food web
- describe the relationships between the kelp crab, sea otter, and sea urchin
- explain how each organism in the food web would be affected by a change in the sea urchin population (2005)

41. A student is studying the relationship between a leafy plant and a species of beetle. He divided 20 plants into two groups. He planted each group in a separate planter box. He then released 50 beetles into one of the planter boxes. The beetles fed on the leaves and left a white substance around the plant changing the pH of the soil. He recorded the average height of the plants at the end of three months. His data are shown below.

Plant Data

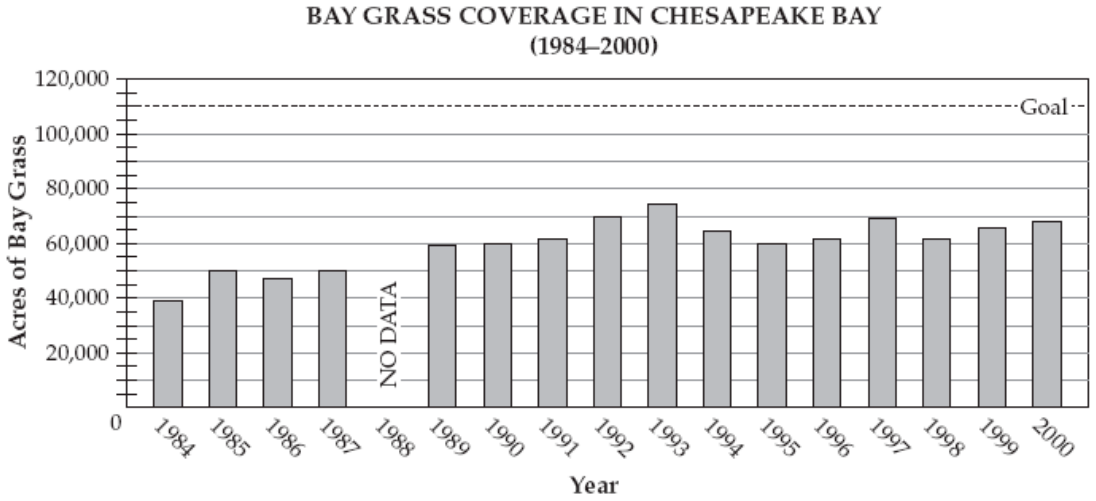
Group	Average Height (cm)
1 (Grown with beetles)	12
2 (No beetles)	36

- How did the substance probably affect the growth of the plants in Group 1?
- Describe how changes in pH may affect the metabolic rates of cells.
- Describe how other environmental factors could affect growth in plants. (2003)

42. There are approximately 14 species of bay grasses in the Chesapeake Bay. Bay grasses provide a habitat for birds, fish, and shellfish. Most bay grasses grow attached to the bottom substrate in shallow water.

Scientists estimate that the area covered by bay grasses once exceeded 600,000 acres. In 1978, scientists learned that bay grasses only covered 41, 000 acres.

Scientists began working to improve environmental conditions in the bay. They replanted bay grasses in some areas. They set a goal of having 110,000 acres of bay grasses by the year 2000. The data collected from yearly surveys of bay grasses is shown in the graph below.



Evaluate the success of this project. In your response, be sure to:

- predict the most likely value for the missing data in 1988; explain you answer
- describe the trend in the area covered by bay grasses in the Chesapeake Bay from 1984 to 2000; use specific information from the graph to support your answer
- suggest possible reasons for the changes in the graph between 1993 and 1995
- describe ways that individuals can help in the restoration of bay grasses (2005)

*Note: BCR #19 can also be used in this section
BCR #20 can also be used in this section.

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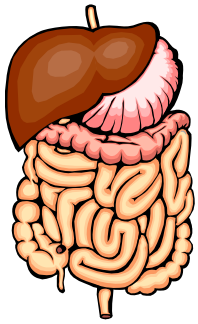
Body Systems



44. All organisms must be able to exchange chemical substances between their cells and their environment. Some organisms are unicellular and others are multicellular. These organisms have different strategies to obtain and use these chemical substances.

- What chemical substances must be exchanged between each organism and its environment?
- Describe the processes that cause these chemical substances to move into and out of cells.
- Describe the role of the cell membrane in the exchange of materials in both types of organisms.
- Describe the role of body systems in the exchange of materials in a multicellular organism. (2004)

45. Mammals are exposed to a variety of outside temperatures. However, they are able to maintain a constant internal body temperature.

Describe ways that mammals warm and cool themselves in response to their environment.

Include in your response:

- an example of a mammal and its environment
- both body structures and activities they use
- specific examples of both warming and cooling (2005)

*Note: BCR#16 can also be used in this section.

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Science Rubric

Level 4
There is evidence in this response that the student has a *full and complete understanding* of the question or problem.

- Pertinent and complete supporting details demonstrate an integration of ideas.
- The use of accurate scientific terminology enhances the response.
- An effective application of the concept to a practical problem or real-world situation reveals an insight into scientific principles.*
- The response reflects a complete synthesis of information.

Level 3
There is evidence in this response that the student has a *good understanding* of the question or problem.

- The supporting details are generally complete.
- The use of accurate scientific terminology strengthens the response.
- The concept has been applied to a practical problem or real-world situation.*
- The response reflects some synthesis of information.

Level 2
There is evidence in this response that the student has a *basic understanding* of the question or problem.

- The supporting details are adequate.
- The use of accurate scientific terminology may be present in the response.
- The application of the concept to a practical problem or real-world situation is inadequate.*
- The response provides little or no synthesis of information.

Level 1
There is evidence in this response that the student has *some understanding* of the question or problem.

- The supporting details are only minimally effective.
- The use of accurate scientific terminology is not present in the response.
- The application, if attempted, is irrelevant.*
- The response addresses the question.

Level 0
There is evidence that the student has *no understanding* of the question or problem.

- The response is completely incorrect or irrelevant or there is no response.

* On the High School Assessment, the application of a concept to a practical problem or real-world situation will be scored when it is required in the response and requested in the item stem.
Updated 2002 taken from http://www.mdk12.org

Student's Constructed Response Checklist

Biology

- ✓ Read the question to determine its general topic.

- ✓ Read the question again to clearly understand each part of the question you must answer.

- ✓ Outline the different elements of the correct responses. On a piece of scrap paper, write down:

    - the main idea or concept behind the question
    - scientific terms that are appropriate to the question
    - data and other information from activities you completed in the classroom or laboratory that are related to the question

- ✓ Write your responses, using all the appropriate information required to answer the question thoroughly.

- ✓ Read your response to make sure that it is clear and understandable.

- ✓ Revise your response, if necessary.