

June Review Term 3

Topic 1- Links and Guides and Systems

1. Fill in the table explaining what each term means.

Direct link		Removable
Indirect link		Non removable
Complete		Rigid
Partial		Elastic Flexible

2. For the following examples, state the 4 parts of a link that apply to it.

a- The ~~cap~~ of a pen:

b- A poster of Justin Beiber scotch taped to the wall:

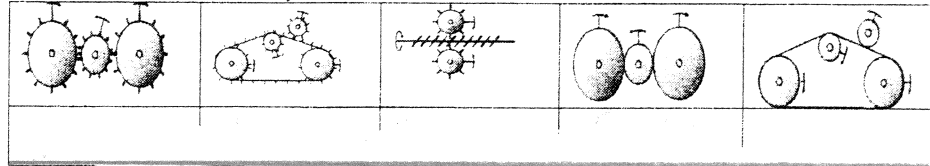
3. What are the three types of guides?

4. What is ~~the~~ movement for a helical guide?

5. What is the difference between a transformation and a transmission system?

6. What do the terms driver, driven and intermediate mean?

7. Name each transmission system.



4. Name different ways carbon dioxide is released into the environment.

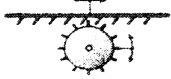



5. What role does photosynthesis play in the carbon cycle?

6. Explain how fossil fuels are formed.

7. Give characteristics of the following biomes:

Tropical	Boreal	Temperate	Grasslands
Arctic tundra	Deserts	Alpine	Lakes
Rivers and streams	Wetlands	Estuaries	Oceans and seas
Coral reefs			

8. From the systems listed in question 7, which is the only non-reversible one?
9. What is the formula to calculate speed change?
10. If the driver of a gear train has 40 teeth and the driven has 20 teeth, what is the speed change? What if the driver had 20 teeth and the driven had 40?
11. Name each transformation system and give the movement for each part.

Topic 2- Materials

1. Explain what a constraint is.

2. Fill in the table by giving the description of the constraints below and give an example for each.

Compression	Tension	Torsion	Deflection	Shearing

3. Explain the three types of deformations below.

Elastic	Plastic	Fracture

4. Give the definition of the following properties.

Hardness	Elasticity	Resilience	Ductility	Malleability
Stiffness	Resistance to corrosion	Thermal conductivity	Electrical conductivity	

5. Give 2 main characteristics for each type of material

Wood and Modified wood	Ceramics	Metals and Alloys	Plastics	Composites
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Topic 3- Biosphere and Biomes

1. Explain each layer

Lithosphere	Hydrosphere	Atmosphere	Biosphere
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2. What different compounds is carbon found in?

3. What is negative about methane and carbon dioxide?

Topic 4- Populations and Ecosystems

1. Define the term population.
2. In a forest, 24 chickadees were born, 17 flew in for the summer, 12 died because of the harsh winter and 7 emigrated because of the lack of resources. Was there a population increase or decrease during the year?
3. Explain what population density is.
4. You counted 150 dandelions in a 6 m² area. What is their population density?
5. Give 2 examples of biotic and abiotic factors.
6. Draw what each type of population distribution would look like.

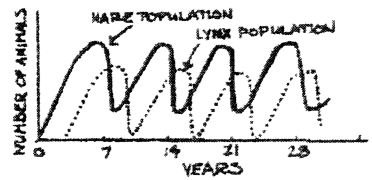
Clumped	Uniform	Random

7. Explain what a limiting factor is.
8. The X's, O's, W's and T's represent different populations in a community.

X T T T T O O X T T T T T O O X T T T T O O W

- A- Calculate the relative abundance of each species.
- B- Do you believe this community has a high biodiversity? Explain.

9. Use the graph to answer the questions.
- A- What causes the lynx population to increase?
 - B- What causes the hare population to decrease?
 - C- What causes the lynx population to decrease?
 - D- What causes the hare population to increase?
 - E- How long does this cycle last?



10. Define and give examples of the following words.

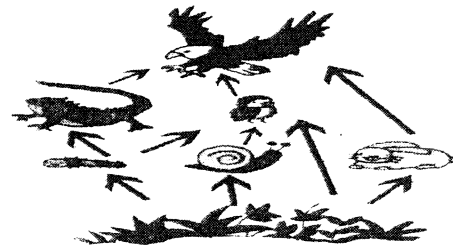
	Definition	Example
Mutualism		
Predation		
Parasitism		
Commensalism		
Competition		

11. Define the following terms and give an example of each.

	Ecosystem	Producer	Consumer	Decomposer
Definition				
Example				

12. Using the picture, answer the following questions:

- Name a secondary producer?
- Can the bird be a primary and secondary consumer?
- Make a food chain with 3 consumers
- Give a consequence of the lizard being taken out of the food web.



13. Explain why the sun is necessary for the energy flow between trophic levels.

14. Explain what biomass is.

15. What is primary productivity and what is it influenced by?

Topic 5- Earth and Space

Refer to the notes you received.