Subject: Science

Level: Standard 3

Strand: Systems and Interaction

Topic: Effect of natural factors on aquatic environments

Key Points:

- An aquatic environment is an area where there is water and where the living and non-living components interact and depend on each other.
- Examples of aquatic environments are rivers, ponds swamps/ wetlands and marine.
- Plants and animals live in these environments and they are dependent on each other and on the environment.
- **Natural** factors can affect aquatic environments
- **Natural factors** are caused by conditions which are not influenced by humans
- Various natural factors which affect the balance of life in the aquatic habitat include:
    - Kind of animals found
    - Kind of plants found
    - Types of soil
    - Type of water: salt, fresh or brackish
    - Weather and climate: temperature, rainfall

Activity:

1. **In the word search, several aquatic habitats are listed.**
   Identify them.

C S A S C U S W A M P B A D I V I N G R G B I R O C P J Q S D O H K L

I P C T A W D R I B E M N Q F M I R I V E R N E R A L S T F S E D I W

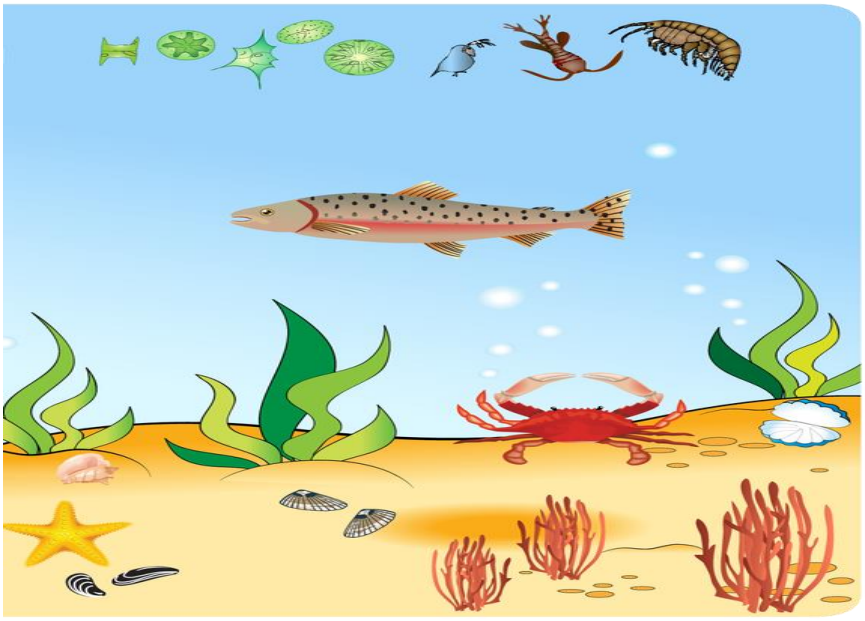
I R M I N G D N G I P O N D M E P I J K N J N R O N E H A R E P I J K

K I E C M A R I N E D I W D H C R E T R W A T E O N F E G E B G I R O

R N T R W A T E O C E A N P E B F T D C G A B U H A T E A F J K N J L

Z G I K T A S G N G R J S W U N X S E L A K E V T U V L M O C P J Q D

2. Picture 1 below is an example of an aquatic habitat.



Identify some factors which maintains the environment so everything exists in balance:

- _____
- _____
- _____
- _____
- _____

3. Factors in aquatic environments are affected by weather conditions andthe type of climate. The Flow Chart below shows the effects of climate on a pond.

Complete the lines to show how stages **c** and **d** are affected in the DRY season.

a. Weeks of no rain during the Dry Season

b. The pond is almost dry

c. Effects of dry season on the pond conditions:

Amount of water available is

_____

Hot and sunny weather causes water temperature to

_____

d. Effects of drought due to dry season,on living things in the pond:

Since the water is decreasing, water plants will _____

Animals that feed on water plants will

_____

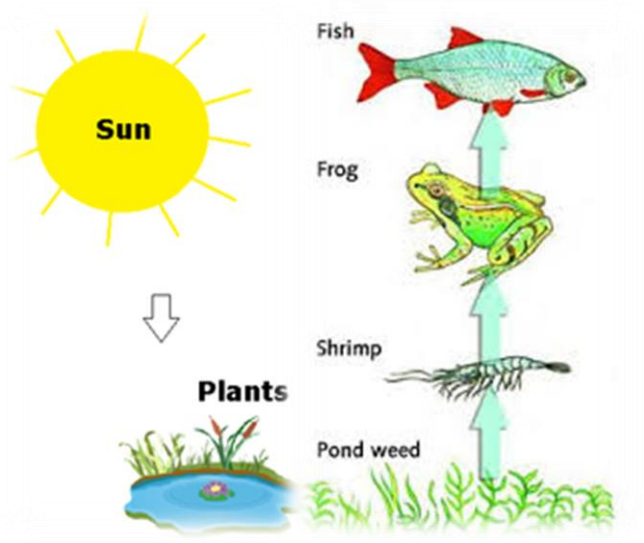
e. Responses of animals to changes in factors in the pond:

i. **migrate**: animals move to another place to survive the dry season and may return when the drought is over.

ii**. burrow**: animals dig into the bottom of the pond and remain as inactive as possible so they may survive the period of drought

iii. **fewer births:** living things lose their homes and nesting sites and may not bear young ones, bear fewer young ones or fewer babies survive

4. (i) State how the number of each of the picture below (picture 2) is affected during the Dry Season.



PICTURE 2: POND LIFE

(a) Pond Weeds _____

(b) Shrimps _____

(c) Fishes _____

(ii).Draw a food chain to show the feeding relationship between shrimp, fish and pond weeds.

Explain how the number of water weeds, shrimp and fish are affected by each other.

_____

_____

Assessment:

The following questions are based on the information shown in PICTURE 2: POND LIFE

When the rainy season comes, a fish farmer transfers the fishes he kept safely in an aquarium during the dry season into the pond.

i. According to picture 2, what animal do the fishes eat in the pond?

_____

ii. How would the amount of shrimps be affected in the first day after the farmer adds the fishes to the pond?

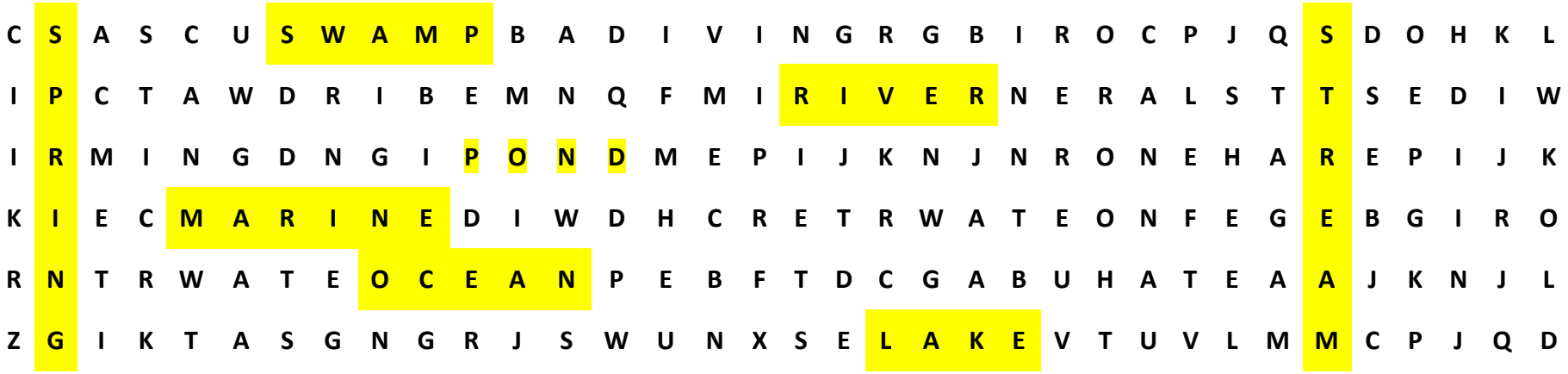
_____

iii. When the farmer begins to catch fishes from the pond to sell, what happens to the amount of shrimp?

_____

Answer Key

Activity 1.



2. Identify some factors which maintains the environment so everything exists in balance:

- **Animals**
- **Plants**
- **Gases (bubbles)**
- **Sunlight**
- **Soil**

3. The Flow Chart showing how stages **c** and **d** are affected.

c. Effects of dry season on the pond conditions:

Amount of water available is less. Water depth is low.

Hot and sunny weather causes water temperature to increase.

d. Effects of drought due to dry season, on living things in the pond:

Since the water is decreasing, water plants will not grow and some even begin to die.

Animals that feed on water plants willhave less food and some die.
This means less food for the frog and fish, so some may also die.

4. (i) During the Dry Season , the number of organisms are affected as follows:

(a). Pond Weeds: Decreases
(b). Shrimps: Decreases
(c). Fishes: Decreases



(ii). Explain how the number of pond weeds, shrimp and fish are affected by each other.

Shrimps feed on the water weeds so if the weeds die there is less food for the shrimp.

As a result of this, the shrimps will begin to die.

Therefore there would be less food for fish, leading to less fish.

Assessment:

The following questions are based on the information shown in PICTURE 2: POND LIFE

When the rainy season comes, a fish farmer transfers the fishes he kept safely in an aquarium during the dry season into the pond.

i. According to picture 2, what animal do the fishes eat in the pond?

   Frogs

ii. How would the amount of shrimps be affected in the first day after the farmer adds the fishes to the pond?

   Since the fishes will eat the frogs, there are less frogs to eat the shrimps.

   There would be more shrimp for this short time after the fishes are added to the pond.

iii. When the farmer begins to catch fishes from the pond to sell, what happens to the amount of shrimp?

   When there are less fishes to eat the frogs, the amount of frogs will increase.

   The increase in amounts of frogs means more shrimp will be eaten.

   The amount of shrimp decreases when the farmer begins to sell the fishes.

Acknowledgement

Activity with Picture	**Reference**
2. Picture 1 of an aquatic habitat	https://commons.wikimedia.org/wiki/File:736377_orig.png
4. (i) Picture 2: Pond Life	https://www.pinterest.com/pin/43276846397871374/ https://adflipped.weebly.com/food-chain.html