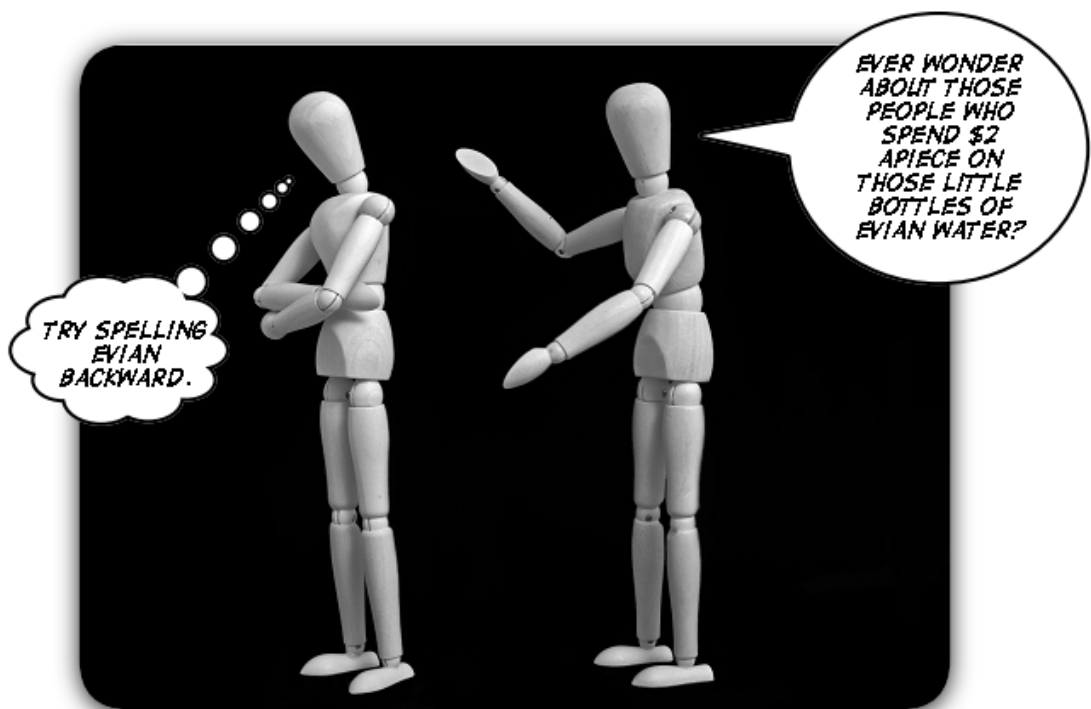


# **WEEK EIGHT: AQUATIC BIOME**

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# **DAY ONE**

**TODAY, YOU AND YOUR CHILD WILL:**

- 1. READ THE TEXT**
  - 2. REVIEW THE TEXT WITH YOUR CHILD**
  - 3. COMPLETE THE STUDENT WORKSHEETS**
  - 4. FIND THE MATERIALS YOU WILL NEED FOR DAYS TWO AND THREE**
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**DURING YOUR REVIEW, THE FOLLOWING LIST WILL GIVE YOU THE MOST IMPORTANT PARTS OF YOUR CHILD'S READING FOR THIS WEEK.**

AN ORGANISM'S PATTERNS OF BEHAVIOR ARE RELATED TO THE NATURE OF THAT ORGANISM'S ENVIRONMENT, INCLUDING THE KINDS AND NUMBERS OF OTHER ORGANISMS PRESENT, THE AVAILABILITY OF FOOD AND RESOURCES, AND THE PHYSICAL CHARACTERISTICS OF THE ENVIRONMENT.

THE AQUATIC BIOME CONTAINS A HUGE TEMPERATURE RANGE FROM HOT TO COLD, DEPENDING UPON THE TYPE OF HABITAT (FRESHWATER, SALTWATER, ESTUARY, ETC.) NATURALLY, WATER IS IN ABUNDANCE AND VERY LITTLE SOIL EXISTS. THIS BIOME CONTAINS A MASSIVE AMOUNT OF ORGANISMS AS IT IS THE LARGEST BIOME IN THE WORLD.

## DEFINITIONS:

<b>AQUATIC BIOME</b>	A BIOME THAT INCLUDES ALL ORGANISMS THAT LIVE WITHIN FRESH WATER OR SALT WATER
<b>FRESHWATER</b>	THESE HABITATS INCLUDE PONDS, STREAMS, LAKES, RIVERS AND WETLANDS; THEY ARE CALLED "FRESHWATER" BECAUSE OF THE LOW AMOUNT OF SALT IN THE WATER
<b>LAKES</b>	LARGE BODIES OF WATER THAT ARE SURROUNDED BY LAND
<b>PONDS</b>	SMALL BODIES OF WATER THAT ARE SURROUNDED BY LAND
<b>WETLANDS</b>	LARGE AREAS OF SHALLOW WATER; ALSO KNOWN AS SWAMPS
<b>STREAMS</b>	SMALL BODIES OF FRESHWATER MOVING IN ONE DIRECTION
<b>RIVERS</b>	LARGE BODIES OF FRESHWATER MOVING IN ONE DIRECTION
<b>ESTUARIES</b>	AREAS WHERE RIVERS AND STREAMS FLOW INTO SALTWATER HABITATS
<b>MARINE</b>	SALTWATER HABITATS
<b>OCEANS</b>	THE LARGEST MARINE BIOME IN THE WORLD

## SAMPLE QUESTIONS TO ASK AFTER YOUR CHILD FINISHES THEIR READING FOR DAY ONE:

**WHY ARE WETLANDS IMPORTANT FOR ANIMALS ?**

*WETLANDS PROVIDE PLENTY OF SHELTER AND FOOD FOR ORGANISMS.*

**WHAT IS THE DIFFERENCE BETWEEN A LAKE AND A POND?**

*SIZE...LAKES TEND TO BE LARGER THAN PONDS.*

**WHAT ARE SOME EXAMPLES OF FRESHWATER HABITATS? HOW ARE THESE DIFFERENT FROM SALTWATER HABITATS?**

*LAKES, PONDS, STREAMS AND RIVERS ARE ALL EXAMPLES OF FRESHWATER HABITATS. THESE AREA ARE DIFFERENT FROM SALTWATER HABITATS SINCE THEY DO NOT CONTAIN AS MUCH SALT.*

# **ANSWERS TO WORKSHEET QUESTIONS FOR WEEK EIGHT:**

## **PAGE ONE:**

(WORD SEARCH)

## **PAGE TWO:**

4 - AQUATIC BIOME

3 - FRESHWATER

9 - LAKES

6 - PONDS

2 - WETLANDS

1 - STREAMS

5 - RIVERS

10 - ESTUARIES

7 - MARINE

8 - OCEANS

# **UNIT TWO REVIEW ANSWER KEY**

<b><i>BIONE</i></b>	<b><i>TEMPERATURE</i></b>	<b><i>WATER</i></b>	<b><i>SOIL</i></b>	<b><i>PLANTS AND ANIMALS</i></b>
<b><i>GRASSLAND</i></b>	HOT (AND MAYBE COLD)	WET/DRY SEASON	GOOD NUTRIENTS	MANY ORGANISMS
<b><i>DECIDUOUS FOREST</i></b>	HOT SUMMERS, COLD WINTERS: ALL FOUR SEASONS	<b><i>PLENTY</i></b>	GOOD NUTRIENTS	MANY ORGANISMS
<b><i>CONIFEROUS FOREST</i></b>	MOSTLY COLD	PLENTY	POOR, ROCKY SOIL	MANY ORGANISMS
<b><i>TROPICAL RAIN FOREST</i></b>	ALWAYS HOT	VERY WET	POOR, THIN SOIL	MANY ORGANISMS
<b><i>TUNDRA</i></b>	COLD	VERY DRY	POOR, FROZEN	MIGRATING BIRDS
<b><i>DESERT</i></b>	HOT OR COLD	VERY DRY	POOR	FEW ORGANISMS
<b><i>AQUATIC</i></b>	HOT TO COLD	ALWAYS WET	NO SOIL	MANY ORGANISMS

## **DAY TWO**

**TODAY, YOU AND YOUR CHILD WILL:**

- 1. REVIEW DAY ONE USING THE FOLLOWING TEXT**
- 2. RUN THE ACTIVITY: "WHEN TWO HABITATS COLLIDE"**

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**THE FOLLOWING LIST WILL GIVE YOU THE MOST IMPORTANT ITEMS TO REVIEW FOR YOUR ACTIVITY TODAY!**

ESTUARIES ARE UNIQUE AREAS WHERE FRESHWATER HABITATS MIX WITH SALTWATER HABITATS.

MOST ESTUARIES ARE HOME FOR SPECIES THAT CANNOT LIVE ANYWHERE ELSE IN THE WORLD.

THE MIXING OF AN ESTUARY IS TYPICALLY CAUSED BY THE INCREASED WIND AND WATER CURRENTS OF THE OCEAN.

## **WHEN TWO HABITATS COLLIDE...**

CHILDREN WILL EXPLORE THE DIFFERENCE BETWEEN FRESHWATER AND SALTWATER WHEN THESE TWO HABITATS MIX TOGETHER TO FORM AN ESTUARY!

### **MATERIALS:**

WARM WATER

SALT

BLUE FOOD COLORING (ANY COLOR WILL WORK!)

TWO DRINKING GLASSES

### **ACTIVITY:**

FILL A GLASS HALFWAY WITH WARM WATER AND ADD A SPOONFUL OF SALT. STIR THE MIXTURE AND WAIT UNTIL THE WATER IS STILL. LOOK FOR ANY SALT THAT REMAINS IN THE WATER. KEEP ADDING SPOONFULS OF SALT UNTIL THE WATER CANNOT DISSOLVE ANY MORE!

STIR IN ENOUGH BLUE FOOD COLORING INTO THE GLASS TO TURN THE LIQUID DARK BLUE. THIS GLASS REPRESENTS THE SALTY OCEAN WATER.

FILL A SECOND GLASS HALFWAY WITH WARM WATER. THIS GLASS REPRESENTS FRESH RIVER WATER.

NOW TELL YOUR CHILD THAT YOU WILL BE SLOWLY POURING THE FRESHWATER INTO THE SALTWATER. HAVE THEM MAKE A PREDICTION AS TO WHAT MAY HAPPEN.

NOW TAKE THE GLASS WITH THE BLUE SOLUTION (OCEAN WATER) AND SLOWLY POUR IT INTO THE GLASS OF WARM WATER (RIVER WATER).

POUR IT VERY SLOWLY ONTO THE EDGE OF THE GLASS! YOU DO NOT WANT TO MIX THIS SOLUTION!!!

**EXPLANATION:**

AREAS WHERE RIVERS FLOW INTO THE OCEAN ARE KNOWN AS ESTUARIES. FRESH WATER IS LESS DENSE THAN OCEAN WATER. SO, THE FRESHWATER FLOATS ON TOP OF THE DENSER OCEAN WATER. OCEAN WATER IS MORE DENSE BECAUSE IT HAS MORE "STUFF" IN IT (LIKE A WHOLE BUNCH OF SALT!!!) THAN COMPARED TO FRESH RIVER WATER. IN AN ESTUARY THERE MAY BE A SMALL ZONE BETWEEN THE FRESH AND SALT WATER, BUT THEY TEND TO REMAIN SEPARATE FROM EACH OTHER. FURTHER OUT INTO THE OCEAN, THE RIVER AND OCEAN WATER MIX TOGETHER BECAUSE OF THE INCREASED WIND AND WATER CURRENTS.

## **DAY THREE**

**TODAY, YOU AND YOUR CHILD WILL:**

- 1. REVIEW DAY ONE USING THE FOLLOWING TEXT**
- 2. RUN THE ACTIVITY: "A PROBLEM SOLVING GAME WITH SALT WATER"**

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**THE FOLLOWING LIST WILL GIVE YOU THE MOST IMPORTANT ITEMS TO REVIEW FOR YOUR ACTIVITY TODAY!**

THE DENSITY OF SALTWATER IS MUCH HIGHER THAN THE DENSITY OF FRESHWATER. BECAUSE OF THIS, SALTWATER SINKS TO THE BOTTOM OF A GLASS OF FRESHWATER.

THIS CHANGE IN DENSITY AFFECTS THE HABITATS OF ORGANISMS THAT LIVE IN ESTUARIES. THESE AREAS PROVIDE A HABITAT THAT SUPPORT UNIQUE SPECIES.

## **A PROBLEM SOLVING GAME WITH SALT WATER...**

CHILDREN WILL SOLVE A PUZZLE THAT INVOLVES DIFFERENT MIXTURES OF SALT-WATER SOLUTION.

### **MATERIALS:**

SALT (PICKLING SALT WORKS BEST...YOU CAN FIND THIS IN THE SPICE ISLE OF MOST GROCERY STORES)

THREE (OR MORE) CUPS

WATER

CLEAR DRINKING STRAW

FOOD COLORING

SPOON

### **ACTIVITY:**

FILL ONE OF THE CUPS WITH TAP WATER. THE AMOUNT OF WATER DOES NOT MATTER. HOWEVER, YOU WANT NO MORE THAN AN INCH OF WATER IN THE CUP! PLACE A DROP OF RED FOOD COLORING INTO THIS WATER AND MIX.

PLACE A SPOONFUL OF PICKLING SALT INTO ONE OF THE CUPS AND FILL IT WITH WATER. MIX UNTIL THE SALT DISSOLVES. ADD A DROP OF YELLOW FOOD COLORING INTO THIS MIXTURE AND STIR.

PLACE TWO SPOONFULS OF WATER INTO ANOTHER CUP, FILL IT WITH WATER AND MIX. ADD A DROP OF GREEN FOOD COLORING TO THIS MIXTURE AND STIR.

HAVE THE CHILD TAKE THEIR STRAW AND INSERT IT INTO THE RED CUP OF WATER. INSTRUCT THEM TO COVER THE TOP OF THE STRAW WITH THEIR FINGER AND REMOVE THE STRAW. THE LIQUID SHOULD STAY IN THE STRAW!

NOW, HAVE THEM SLOWLY INSERT THEIR STRAW INTO THE YELLOW WATER. THEIR FINGER SHOULD STAY ON THE TOP OF THE STRAW!!! THE RED LIQUID FROM THE FIRST CUP SHOULD STAY IN THE STRAW!!!

ONCE THEIR STRAW REACHES THE BOTTOM OF THE SECOND CUP, THEY CAN SLOWLY REMOVE THEIR FINGER AND LET AIR ENTER THE STRAW. AFTER TWO SECONDS THEY CAN RECOVER THE STRAW WITH THEIR FINGER AND SLOWLY PULL THE STRAW OUT OF THE CUP.

SINCE THE RED LIQUID IN THE FIRST CUP CONTAINS NO SALT AT ALL, IT WILL "STACK" ON TOP OF THE YELLOW LIQUID. THIS WILL FORM TWO LAYERS OF WATER IN THEIR STRAW! TRY THIS ONCE MORE WITH THE GREEN LIQUID!

**EXPLANATION:**

YOU WILL WANT TO USE PICKLING SALT SINCE THIS SUBSTANCE DISSOLVES CLEARLY IN WATER. TABLE SALT TENDS TO LEAVE A CLOUDY APPEARANCE.

THE LESS DENSE AN OBJECT IS, THE MORE LIKELY IT IS TO FLOAT ON TOP OF DENSER SUBSTANCE. IN THIS CASE, THE RED LIQUID CONTAINS NO SALT AT ALL. THEREFORE, IT IS LESS DENSE THAN THE OTHER LIQUIDS. WHEN THE STRAW CONTAINING THE RED LIQUID IS PLACED INTO THE YELLOW LIQUID AND THE CHILD'S FINGER IS REMOVED, AIR PRESSURE IN THE CUP FORCES THE YELLOW LIQUID UP AND INTO TO THE STRAW. SINCE THE YELLOW LIQUID IS MORE DENSE THAN THE RED LIQUID, THE TWO FLUIDS DO NOT MIX. INSTEAD, THEY "STACK" ON TOP OF EACH OTHER. BY ADDING THE GREEN LIQUID, THE CHILD CAN SEE THREE SEPARATE LAYERS IN THEIR STRAW!

THIS ACTIVITY CAN BE MODIFIED FOR THE AGE OF THE CHILD. THREE CUPS WORK JUST FINE WITH YOUNGER CHILDREN. YOU CAN ALSO INCREASE THE NUMBER OF SALT SOLUTIONS OR CHALLENGE THE CHILD TO FIND THE RIGHT COMBINATION WITHOUT INFORMING THEM OF THE CONTENTS IN EACH CUP.

# UNIT TWO TEST

**MATCH THE WORDS IN THE FIRST COLUMN TO THE BEST AVAILABLE ANSWER IN THE SECOND COLUMN.**

—	CONIFEROUS FOREST BIOME	1. A LAYER OF FROZEN SOIL
—	FRESHWATER	2. A BIOME THAT INCLUDES ALL ORGANISMS THAT LIVE WITHIN FRESH OR SALT WATER
—	DESERT BIOME	3. A BIOME THAT IS FILLED WITH TREES THAT LOSE THEIR LEAVES IN THE FALL AND HAS FOUR SEPARATE SEASONS
—	TUNDRA	4. AREAS WHERE RIVERS AND STREAMS FLOW INTO SALTWATER HABITATS
—	DECIDUOUS FOREST BIOME	5. TREES WITH SHORT WAXY NEEDLES AND MAKE SEEDS THAT ARE CALLED CONES
—	BIOMES	6. THIS BIOME IS ALWAYS WARM, HAS A LOT OF RAINFALL AND A HUGE AMOUNT ORGANISMS
—	CONIFERS	7. THESE HABITATS INCLUDE PONDS, STREAMS, LAKES RIVERS AND WETLANDS.
—	AQUATIC BIOME	8. A BIOME WITH FEW TREES AND GOOD SOIL FOR MANY DIFFERENT GRASSES
—	TROPICAL RAIN FOREST BIOME	9. A BIOME WITH HOT DAYS, COLD NIGHTS, VERY LITTLE WATER AND FEW ORGANISMS
—	GRASSLAND BIOME	10. A BIOME WITH LONG WINTERS AND IS FILLED WITH TREES KNOWN AS CONIFERS
—	permafrost	11. AREAS OF THE WORLD THAT HAVE THE SAME TEMPERATURE, AMOUNT OF RAINFALL, KIND OF SOIL AND HABITATS
—	ESTUARIES	12. THE COLDEST BIOME ON THE PLANET

**WHICH ONE IS RIGHT? CIRCLE THE CORRECT ANSWER.**

**1. THE DIFFERENCE BETWEEN TROPICAL AND TEMPERATE GRASSLANDS IS:**

- A. TEMPERATE GRASSLANDS ARE HOT ALL YEAR LONG
- B. TROPICAL GRASSLANDS ARE COLD ALL YEAR LONG
- C. TEMPERATE GRASSLANDS HAVE HOT AND COLD SEASONS

**2. BIOMES HAVE BEEN MADE TO GROUP AREAS OF THE WORLD WITH THE SAME...**

- A. TEMPERATURE, RAINFALL, KIND OF SOIL AND HABITATS
- B. TEMPERATURE, KINDS OF PLANTS AND ANIMALS AND SOIL
- C. KINDS OF PLANTS AND ANIMALS, RAINFALL AND HABITATS

**3. TREES IN A CONIFEROUS FOREST GET MOST OF THEIR WATER FROM:**

- A. RAIN
- B. ICE
- C. MELTED SNOW

**4. THE COLDEST BIOME IN THE WORLD IS THE:**

- A. TUNDRA
- B. CONIFEROUS FOREST
- C. GRASSLAND

**5. FRESHWATER BIOMES INCLUDE:**

- A. LAKES, RIVERS AND THE OCEAN
- B. PONDS, LAKES AND STREAMS
- C. RIVERS, PONDS AND THE OCEAN

**6. HOW DO ANIMALS THAT LIVE IN THE TUNDRA KEEP WARM?**

- A. BY ALWAYS MOVING AND STAYING WARM
- B. BY MIGRATING AND BURROWING INTO THE GROUND
- C. BY SLEEPING ALL WINTER LONG

## FILL IN THE BLANKS IN THE TABLE FROM THIS LIST OF WORDS:

- A) FEW ORGANISMS
- B) MIGRATING BIRDS
- C) POOR, ROCKY SOIL
- D) WET/DRY SEASON
- E) HOT SUMMERS/COLD WINTERS; ALL FOUR SEASONS
- F) ALWAYS WET

<b>BIOME</b>	<b>TEMPERATURE</b>	<b>WATER</b>	<b>SOIL</b>	<b>PLANTS AND ANIMALS</b>
GRASSLAND	HOT (AND MAYBE COLD)		GOOD NUTRIENTS	MANY ORGANISMS
DECIDUOUS FOREST		PLENTY	GOOD NUTRIENTS	MANY ORGANISMS
CONIFEROUS FOREST	MOSTLY COLD	PLENTY		MANY ORGANISMS
TROPICAL RAIN FOREST	ALWAYS HOT	VERY WET	POOR, THIN SOIL	MANY ORGANISMS
TUNDRA	COLD	VERY DRY	POOR, FROZEN	
DESERT	HOT OR COLD	VERY DRY	POOR	
AQUATIC	HOT TO COLD		NO SOIL	MANY ORGANISMS

# UNIT TWO TEST: ANSWER KEY

<b>MATCHING</b>	<b>MULTIPLE CHOICE</b>
<p>10 CONIFEROUS FOREST BIOME                      7 FRESHWATER                      9 DESERT BIOME                      12 TUNDRA                      3 DECIDUOUS FOREST BIOME                      11 BIOMES                      5 CONIFERS                      2 AQUATIC BIOME                      6 TROPICAL RAIN FOREST BIOME                      8 GRASSLAND BIOME                      1 PERMAFROST                      4 ESTUARIES</p>	<p>1. C                      2. A                      3. C                      4. A                      5. B                      6. B</p>

## FILL IN THE BLANKS

<b>BIOME</b>	<b>TEMPERATURE</b>	<b>WATER</b>	<b>SOIL</b>	<b>PLANTS AND ANIMALS</b>
GRASSLAND	HOT (AND MAYBE COLD)	WET/DRY SEASON	GOOD NUTRIENTS	MANY ORGANISMS
DECIDUOUS FOREST	HOT SUMMERS, COLD WINTERS: ALL FOUR SEASONS	PLENTY	GOOD NUTRIENTS	MANY ORGANISMS
CONIFEROUS FOREST	MOSTLY COLD	PLENTY	POOR, ROCKY SOIL	MANY ORGANISMS
TROPICAL RAIN FOREST	ALWAYS HOT	VERY WET	POOR, THIN SOIL	MANY ORGANISMS
TUNDRA	COLD	VERY DRY	POOR, FROZEN	MIGRATING BIRDS
DESERT	HOT OR COLD	VERY DRY	POOR	FEW ORGANISMS
AQUATIC	HOT TO COLD	ALWAYS WET	NO SOIL	MANY ORGANISMS