

## **ANSWERS:**

### **Science Problems:**

- 1) Two of the biggest problems that the ocean is facing are global warming and pollution.
- 2) Global warming is the increase of temperature in Earth's atmosphere.
- 3) Greenhouse gases
- 4) Carbon dioxide, methane, and water vapor.
- 5) Burning fossil fuels increases the amount of carbon dioxide in the air.
- 6) The melting of icebergs causes water levels to rise.
- 7) Deforestation is the cutting of trees.
- 8) More deforestation leads to an increase of carbon dioxide in the air.
- 9) Some ways to prevent global warming are by planting trees, driving less, and turning off electrical devices when they are not being used.
- 10) Two things that pollute the ocean the most are plastic and chemicals.
- 11) There are 5.25 trillion pieces of plastic in the ocean.
- 12) Almost 1 million animals die each year due to plastic in the ocean.
- 13) Most of the pollution in the ocean comes from land.
- 14) Some ways to decrease the amount of pollution in the ocean is by recycling and participating in an ocean/ local beach cleanup.
- 15) Both global warming and pollution are caused by humans.

### Math Puzzles:

- 1) There are 8,000,000,000 people in the world. If each person emits 2 tons of CO<sub>2</sub>, then there 8 billion\*2 tons of carbon dioxide is emitted each year.
- 2) 3.5% is equal to  $3.5/100 = 0.035$ . If we multiply 0.035 with 472505425920000960, we approximately get 1.65. So, there is 1.65 tons of salt in the ocean.
- 3) It is 2021 now. There are 29 years left until it is 2050. This means that  $29*750$  billion tons is the amount of ice that will be melted by 2050.
- 4) One hour has 3600 seconds. This means that  $24000 \text{ tons} * 3600$  is the amount of melting water that is added to the ocean every hour.
- 5) There are seven days in a week. This means that  $1480096*7 = 10360672$  grams is the amount of gasoline burned per week. 10360672 grams is approximately equal to 2694 gallons. If one gallon creates 8,887 grams of CO<sub>2</sub>, then 2694 gallons should create  $2,694*8,887 = 23,941,578$  grams of carbon dioxide.
- 6) If only 20% of all bottles are recycled each year, then the other 80% are not recycled. 80% of those 583 billion plastic bottles are not recycled.  $80/100 * 583 \text{ billion} = 466,400,000,000$ . So each year 466,400,000,000 plastic bottles are not recycled.
- 7) 33% of 8.7 million is 2,871,000.  $8.7 \text{ million} - 2,871,000$  is 5,829,000. So, 5,829,000 species will be left after 2070.
- 8) It is 2021 now. There are 9 years left until 2030. One year has 365 days. So, 9 years will have  $9*365 = 3285$  days. Each day 14,000 pieces of plastic are dumped into the ocean. So,  $14,000*3,285 = 45990000$  pieces of plastic will be dumped in the ocean in 9 years. Currently, there are 5 trillion pieces of plastic in the ocean. Adding 45,990,000/ 46 billion to 5 trillion gives us a pretty long number.

More puzzles will be coming soon!