



The Water Planet



Name _____ Class _____

The Earth as seen from space looks like a blue-colored planet with constant moving swirls of clouds. The Earth is mostly blue because of its large surface area of oceans. The surface area of the waters of the planet takes up about 70 percent of earth's total surface area while the land takes up only about 30 percent.

1. DO THE MATH: Calculate the number of cm out of 20 centimeters for each part of The Water Planet.

KEY:

a. Ocean = 70.9% x 20 cm = _____ cm

b. Land = 29.1% x 20 cm = _____ cm

c. Pacific Ocean = 30.5% x 20 cm = _____ cm

d. Atlantic Ocean = 15.1% x 20 cm = _____ cm

e. Indian Ocean = 13.4% x 20 cm = _____ cm

f. Arctic Ocean = 6.7% x 20 cm = _____ cm

g. Southern Ocean = 3.9% x 20 cm = _____ cm

h. Asia: 8.6% x 20 cm = _____ cm

i. Africa: 6% x 20 cm = _____ cm

j. North America: 4.8% x 20 cm = _____ cm

k. South America: = 3.4% x 20 cm = _____ cm

l. Antarctica: = 2.6% x 20 cm = _____ cm

m. Europe: = 1.99% x 20 cm = _____ cm

n. Australia: = 1.7% x 20 cm = _____ cm

2. COLOR IN THE OCEAN AND LAND: Color only the LEFT half of the 20 cm strip to represent the percentage of ocean and land. The right half will be for oceans and continents.

3. COLOR IN THE OCEANS AND CONTINENTS. Color only the RIGHT half of the 20 cm strip to represent the percentage for each ocean and continent.

SUMMARY QUESTIONS:

1. How much of the Earth's total surface area is the Land?
2. How much of the Earth's total surface area is the Water?
3. List the five oceans in order of size, starting with the largest:

Ocean:	Part of the Total:
a. _____	_____
b. _____	_____
c. _____	_____
d. _____	_____
e. _____	_____

4. If you did the coloring correctly, you had a small slice on the right hand side that was supposed to be water, but is NOT labeled as one of the five oceans. What do you think that area should be labeled? _____
What is the percentage? _____
5. If you did the coloring correctly, you had a small slice on the right hand side that was supposed to be water, but is NOT labeled as one of the five oceans. What do you think that area should be labeled? _____
What is the percentage? _____
6. How much of the Earth's water is Salt Water, contained in the oceans and seas of the planet?
7. How much of the Earth's water is Fresh Water, found on the land of the planet?
8. How much of the Earth's Fresh Water is actually readily accessible for humans to use?
9. Explain why the Earth is called the Water Planet:



TEACHERS' GUIDE:

YOU CAN EASILY MAKE THIS A LOT OF FUN! Even with a lot of math. Here's how: I hope you have a set of classroom calculators! If you don't, see how many you can get by offering bonus points the day of this assignment. If you are lucky, you'll get enough for each pair or small group. **Buy some cheap ones if you have to!**

Show them how to calculate a couple of the beginning items. Use a transparency or project on your Smart Screen. **Make it fun.** Have a different group walk up and record their answer. But first make sure you watch that each group has done their own calculation and recorded it.

HINT: Be sure they realize they need to move the decimal two places to the left to convert the percents to decimals before they multiply. Talk about rounding, but don't worry too much about that. I would have them record the correct ones that I've used because it will be easier for them to color.

ANSWERS:

a. Ocean = 70.9% x 20 cm = 14.2 cm

b. Land = 29.1% x 20 cm = 5.8 cm

c. Pacific Ocean = 30.5% x 20 cm = 6.1 cm

d. Atlantic Ocean = 15.1% x 20 cm = 3.0 cm

e. Indian Ocean = 13.4% x 20 cm = 2.6 cm

f. Arctic Ocean = 6.7% x 20 cm = 1.3 cm

g. Southern Ocean = 3.9% x 20 cm = 0.8 cm

h. Asia: 8.6% x 20 cm = 1.7 cm

i. Africa: 6% x 20 cm = 1.2 cm

j. North America: 4.8% x 20 cm = 0.9 cm

k. South America: = 3.4% x 20 cm = 0.7 cm

l. Antarctica: = 2.6% x 20 cm = 0.5 cm

m. Europe: = 1.99% x 20 cm = 0.4cm

n. Australia: = 1.7% x 20 cm = 0.3 cm

Summary Questions:

1. How much of the Earth's total surface area is the Land? 70.9%
2. How much of the Earth's total surface area is the Water? 29.1%
3. List the five oceans in order of size, starting with the largest:

Ocean:	Part of the Total:
a. <u>Pacific Ocean</u>	<u>30.5%</u>

b. <u>Atlantic Ocean</u>	<u>15.1%</u>
c. <u>Indian Ocean</u>	<u>13.4%</u>
d. <u>Arctic Ocean</u>	<u>6.7%</u>
e. <u>Southern Ocean</u>	<u>3.9%</u>

4. If you did the coloring correctly, you had a small slice on the right hand side that was supposed to be water, but is NOT labeled as one of the five oceans. What do you think that area should be labeled? Seas, Straits, Gulfs, etc.

What is the percentage? 0.4%

5. If you did the coloring correctly, you had a small slice on the right hand side that was supposed to be water, but is NOT labeled as one of the five oceans. What do you think that area should be labeled? Islands in the Oceans & Seas

What is the percentage? 0.1%

6. How much of the Earth's water is Salt Water, contained in the oceans and seas of the planet?
97%

7. How much of the Earth's water is Fresh Water, found on the land of the planet?
3%

8. How much of the Earth's Fresh Water is actually readily accessible for humans to use?
Only 15% of the 3% = 0.0045%

9. Explain why the Earth is called the Water Planet:

Earth is mostly covered by water (70.9%). The water is what is mostly visible from outer space, including the clouds in the atmosphere.

Data Bank:

Total Surface Area of the Planet: (510,066,000 sq km)

Pacific Ocean: 155,600,000 sq km / 510,066,000 sq km = 30.5%

Atlantic Ocean: 76,800,000 sq km / 510,066,000 sq km = 15.1%

Indian Ocean: 68,500,000 sq km / 510,066,000 sq km = 13.4%

Southern Ocean: 20,300,000 sq km / 510,066,000 sq km = 3.97%

Arctic Ocean: 14,100,000 sq km / 510,066,000 sq km = 6.7%

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Total Water Area: 361,419,000 sq km / 510,066,000 sq km = 70.9%

Total Ocean Area: 335,258,000 sq km / 361,419,000 sq km = 92.8% of the 70.9%

Total All Other Seas, Straits, etc.: 26,161,000 sq km / 361,419,000 sq km = 7.2% of the 70.9%

Total Land Area: 148,647,000 sq km / 510,066,000 sq km = 29.1%

Asia: 43,820,000 sq km / 510,066,000 sq km = 8.6% of the 29.1%

Africa: 30,370,000 sq km / 510,066,000 sq km = 6% of the 29.1%

North America: 24,490,000 sq km / 510,066,000 sq km = 4.8% of the 29.1%

South America: 17,840,000 sq km / 510,066,000 sq km = 3.4% of the 29.1%

Antarctica: 13,720,000 sq km / 510,066,000 sq km = 2.6% of the 29.1%

Europe: 10,180,000 sq km / 510,066,000 sq km = 1.99% of the 29.1%

Australia: 9,008,500 sq km / 510,066,000 sq km = 1.7% of the 29.1%

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Ocean Surface Area: (335,258,000 sq km)

All other seas, straits, etc.: (26,161,000 sq km)

Total Water Area: (361,419,000 sq km)

Type of Water: (97% salt) (3% fresh)

Amount of the Fresh that is readily available: Only 15% of the Earth's fresh water (which is 3%)

This is my version of the 20 cm "Bar Graph." Thought you might like to see what I did. I would suggest you do your own as well! If they do a really careful job, they will have the .4 and .1 cms left over for the "other" land and water. They should get a BIG pat on the back!

