



GLOBAL CHANGE WORKSHEET

Weather Versus Climate

Weather refers to short-term changes in atmospheric variable typically occurring over hours or days. Weather variables include temperature, precipitation, wind, pressure, cloud cover, etc. Weather predictions are made by meteorologists who use measurements of these variables and computer modeling to forecast using probabilities.

Climate is determined by the average weather conditions of the Earth (or a particular region) over periods of at least three decades to thousands of years. Short-term changes in weather are not considered because they don't provide a long enough view of the weather changes to be of any value when looking at climate change.

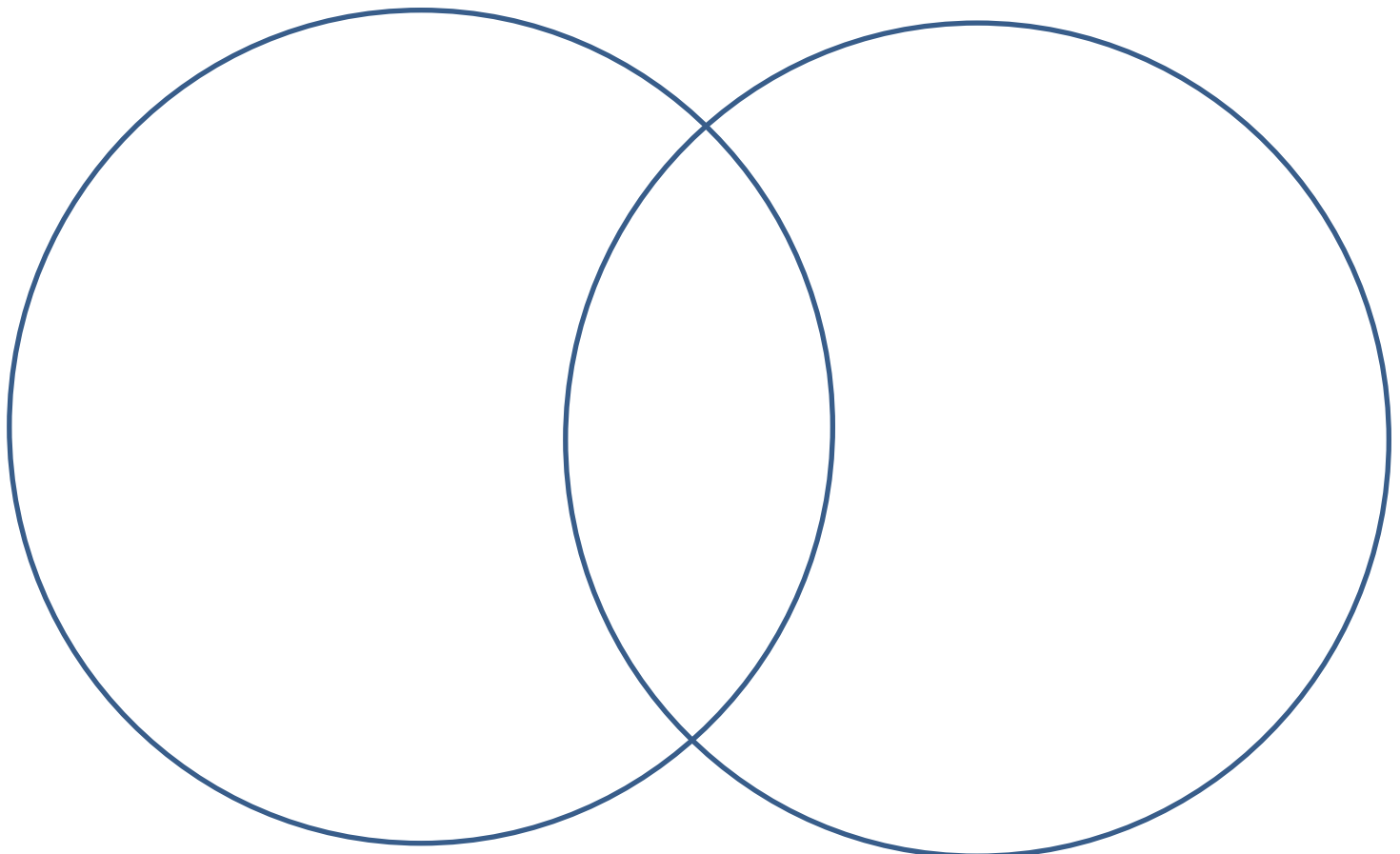
The WorldStrides Curriculum and Academics Team is excited to share an activity from our discovery journal series. These mini-lessons are meant to spark your curiosity, build on prior knowledge, and support continued growth in a variety of subjects. Explore your world, do some research, and most importantly, have fun! This worksheet, and others like it, can be found by visiting the Resources section of worldstrides.com



The difference between weather and climate is an important one when considering climate change. However, there are some similarities. Fill out the Venn diagram to highlight the similarities and differences.

WEATHER

CLIMATE





ENERGY

We use energy in all aspects of our daily lives: transportation, heating and cooling, cooking, lighting, communications and much more. These activities require that energy resources are converted to usable energy. This follows the *first law of thermodynamics* which says that energy is simply transformed between different forms of energy, but not created or destroyed. It must also be considered that it takes energy to make energy. For example, before fossil fuels can be useful, they must be extracted from the ground, transferred

to a refinery, and converted to useful fuel. The *second law of thermodynamics* states that in this conversion process, the quality of energy degrades with each energy transformation and some of the original energy is “lost” to heat. The usable energy that is available is referred to as the next energy yield. Net energy yield is the total amount of energy made available from an energy resource minus the energy that it took to make that energy available. Each energy resource has advantages and disadvantages, and varying degrees of

efficiency, net energy yield and environmental impacts.

Renewable vs Non-Renewable Resources

Natural resources are the raw materials that we use for housing, clothing, transportation, cooking, heating, etc. These are all the things that we use in our physical environment to meet our needs and wants. These resources can be put into two categories: renewable and non-renewable.



These terms are frequently used when discussing resources, but what do they really mean?

Renewable	Non-Renewable	Recyclable
<p>What does it mean to be renewable? Define it in your own words and provide at least two examples that support your definition?</p>	<p>What does it mean to be non-renewable? Define it in your own words and provide at least two examples that support your definition?</p>	<p>What does it mean to be recyclable? Define it in your own words and provide at least two examples that support your definition?</p>
Empty space for student response	Empty space for student response	Empty space for student response