

Name: _____

Date: _____ Period: _____

Geologic Time

The Physical Setting: Earth Science

Worksheet: Absolute Dating I

- Which radioactive substance would probably be used in dating the recent remains of a plant found in sedimentary deposits?
 - carbon-14
 - potassium-40
 - rubidium-87
 - uranium-238
- Why is carbon-14 not usually used to accurately date objects more than 50,000 years old?
 - Carbon-14 has a shorter half-life and not enough carbon-14 has decayed after 50,000 years.
 - Carbon-14 has been introduced as an impurity in most materials older than 50,000 years.
 - Carbon-14 has a relatively short half-life and too little carbon-14 is left after 50,000 years.
 - Carbon-14 has only existed on Earth during the last 50,000 years.
- If a radioactive material were cut into pieces, the half-life of each piece would be?
 - less than the original specimen's half-life
 - greater than the original specimen's half-life
 - the same as the original specimen's half-life
- A rock contains uranium-238, which has a half-life of 4.5×10^9 years. If the rock is crushed and heated, the half-life of the uranium-238 it contains will
 - increase
 - remain the same
 - decrease
- Why are radioactive materials useful for measuring geologic time?
 - Measurable samples of radioactive materials are easily collected from most rock types.
 - The half-lives of most radioactive materials are less than five minutes.
 - The disintegration of radioactive materials occurs at a predictable rate.
 - The ratio of decay products to undecayed material remains constant in sedimentary rocks.
- Which radioactive element is best suited for determining the age of wooden tools used by prehistoric humans during the last ice age?
 - rubidium-87
 - uranium-238
 - potassium-40
 - carbon-14
- Which radioactive element has a half-life of 4.5 billion years?
 - carbon-14
 - rubidium-87
 - uranium-238
 - potassium-40