Name _____ period _____
Date _____

Write your notes about what you are reading in this space.

Science Shorts -8

Fires in the Sky

When we're lucky enough to see a streak of light blaze across the night sky, we might shout, "There's a shooting star!" A one or two shooting stars, or meteors, streak across the sky every night but there are certain times of the year when there are two or three a minute. These are called meteor showers and they happen when the earth's orbit crosses the path of an asteroid that has been broken apart. These fireballs do indeed come from space. But would you believe that a humble pebble, or even a speck of sand makes the fiery trail?

When the solar system was formed four and a half billion years ago, it contained the Sun at the center and nine planets – including our Earth. But it also contained a variety of smaller bodies. The asteroids, for instance resemble fragments of rock the size of a city, or even a state. And the comets look like enormous, dusty, gritty snowballs.

Just as the planets do, each of these small bodies follows a regular path, or an orbit, around the Sun. But sometimes an asteroid or a comet is quite different from Earth's sends a surprising message to our planet. Imagine you are riding an asteroid around the Sun. You are orbiting beyond Earth, where it is dark and cold. Out of nowhere, another asteroid crashes into yours. Chips of rock and dust fly off. Some of these particles are thrown toward Earth.

Now, imagine you're riding a comet. This comet's orbit is not round but instead has the elliptical shape of a football. As your comet goes around the Sun, it sometimes cuts right across the path of Earth. There's no collision. Nonetheless, your comet will leave behind some particles. That's because comets naturally release dust and pebbles as they fly.

So thanks to asteroids and comets, the solar system is a busy and dusty place! Occasionally, a cloud of space dust and pebbles strikes Earth's atmosphere, the blanket of gases that surrounds our planet. To us the air seems very light and easy to move through. To speeding pieces of asteroid, however, the atmosphere seems as thick as jelly. Sixty miles above our heads, the friction of the particles pushing pas the gasses produces heat. This rubbing actually makes the specks so hot they burn. Then we see bright meteors, or shooting stars.

Part I. Choose the word that best completes each sentence. Circle the letter of your choice.

1. **Friction** is _____.
   (a) light (c) rubbing
   (b) planets (d) rotation

2. The planets in a **solar** system orbit a(n) _____.
   (a) sun (c) meteor
   (b) asteroid (d) atmosphere

3. Many **asteroids** resemble _____.
   (a) stone (c) concrete
   (b) stars (d) disks

4. Some **bodies** are _____.
   (a) planets (c) asteroids
   (b) comets (d) all of the above

5. **Particles** are _____.
   (a) cork (c) enormous
   (b) dust and grit (d) orbits

6. Earth **orbits** around the _____.
   (a) planet (c) particles
   (b) body (d) Sun

7. The **atmosphere** is made of _____.
   (a) ice (c) gases
   (b) jelly (d) none of the above

8. **Comets** contain _____.
   (a) asteroids (c) orbits
   (b) ice (d) porcelain

9. **Meteors** are _____.
   (a) burning particles (c) stars
   (b) burning gases (d) rings

10. An **elliptical** orbit is _____.
    (a) round (c) oval
    (b) square (d) rectangular

Part II. Many science terms have synonyms that are used in everyday conversation. Write the word from the box next to its synonym.

particles	elliptical	atmosphere	friction	meteors

1. shooting stars _____
2. grit _____
3. oval _____
4. rubbing _____
5. air _____