

## Student Comprehension Worksheet

**Directions:** After reading the *Science News* article "[Radioactive cloud traced to Russia](#)," answer the questions that follow.

- 1. The article describes "a nuclear whodunit." What is the mystery that researchers are trying to solve?**
- 2. What data alerted scientists to the mystery and what about that data causes concern?**
- 3. Some scientists believe they have solved the mystery. What is their conclusion about the origin and cause of the mystery?**
- 4. Name the three most important pieces of evidence that support the conclusion.**
- 5. If the scientists' conclusion is correct, the events below preceded the cloud's detection. Number the events according to their chronological order.**
  - Ruthenium-106 was released into the atmosphere.
  - The Mayak facility in Russia attempted to create that source from recently spent fuel.
  - Scientists working on a neutrino experiment in Italy needed a radioactive source that produced neutrinos.
  - The neutrino experiment was canceled.
  - The cloud of ruthenium was carried over parts of Europe.
- 6. Look at the graphic titled "European traveler" in the online version of the story ([www.sciencenews.org/article/2017-radioactive-plume-europe-russia-plant-neutrino-experiment](http://www.sciencenews.org/article/2017-radioactive-plume-europe-russia-plant-neutrino-experiment)). What pattern is shown in the animated graphic? (Include what the circles and colors indicate in your answer.)**

**7. What conclusions can and cannot be drawn from the graphic?**

**8. According to the article, does everyone agree that the mystery is solved? Why or why not?**

**9. Do you think the evidence is strong enough to say the mystery is solved? If yes, why? If not, what additional evidence could help solve the mystery?**