

Name: _____

PROBLEMATIC GAS

In “No Snow Required” (p. 14), you read that landfills are a major source of methane, a potent greenhouse gas that helps trap heat in Earth’s atmosphere, contributing to climate change. Landfills are just one human impact that releases methane into the atmosphere. Reducing the amount of methane emitted is important because the gas traps roughly 30 times more heat than carbon dioxide, another widely released greenhouse gas. The table below shows the sources of methane in the United States in 2017. Use the data to complete the skills sheet.

SOURCES OF METHANE IN THE U.S. (2017)

Methane Source	Percentage
Natural Gas and Petroleum Systems (Production, Processing, and Distribution)	31
Livestock (Enteric Fermentation)	27
Landfills (Breakdown of Waste)	16
Management of Animal Manure	9
Coal Mining (By-product of Coal Extraction)	8
Other	9

SOURCE: INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2017

GRAPH IT

Use the data to create a circle graph showing the percentage of methane emissions from each source in 2017.

Tips to creating a circle graph:

1. Convert the percentages into angle degrees. Example: If 31% of methane emissions were from natural gas and petroleum systems, the pie wedge for that source would be 31% of the 360-degree circle, or 112 degrees ($360 \times 0.31 = 112$).
2. Draw a circle. Mark the middle point and draw a straight line from the middle to the outside of the circle.
3. Use a protractor to draw wedges inside the circle using the angles you calculated in Step 1.
4. Be sure to give your graph a title and to label each section, including the percentage.

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Using the table and graph you made on the previous page, answer the questions below.

QUESTIONS

1. What percentage of methane emissions are related to fossil fuel energy production? (Hint: Fossil fuels include coal, petroleum (oil), and natural gas.)
2. In 2017, roughly 660 million metric tons of methane were released by human-related activities in the U.S. Roughly how much was due to landfills?
3. Enteric fermentation occurs in livestock such as cattle, sheep, and goats because microorganisms in their digestive tracts produce methane when food is digested. How does this explain why livestock are a contributor to methane emissions?
4. Describe three ways individuals can reduce the amount of methane emitted into the atmosphere. Cite evidence from the graph and article to support your answer.
5. Most of the focus on reducing greenhouse gases is related to carbon dioxide, which made up 82 percent of U.S. emissions in 2017. Methane accounted for 10 percent of U.S. emissions in 2017. Explain why reducing methane emissions is still important.