

Warm-Up:

- Copy the following chart in your notebooks, in Environment section of notebook

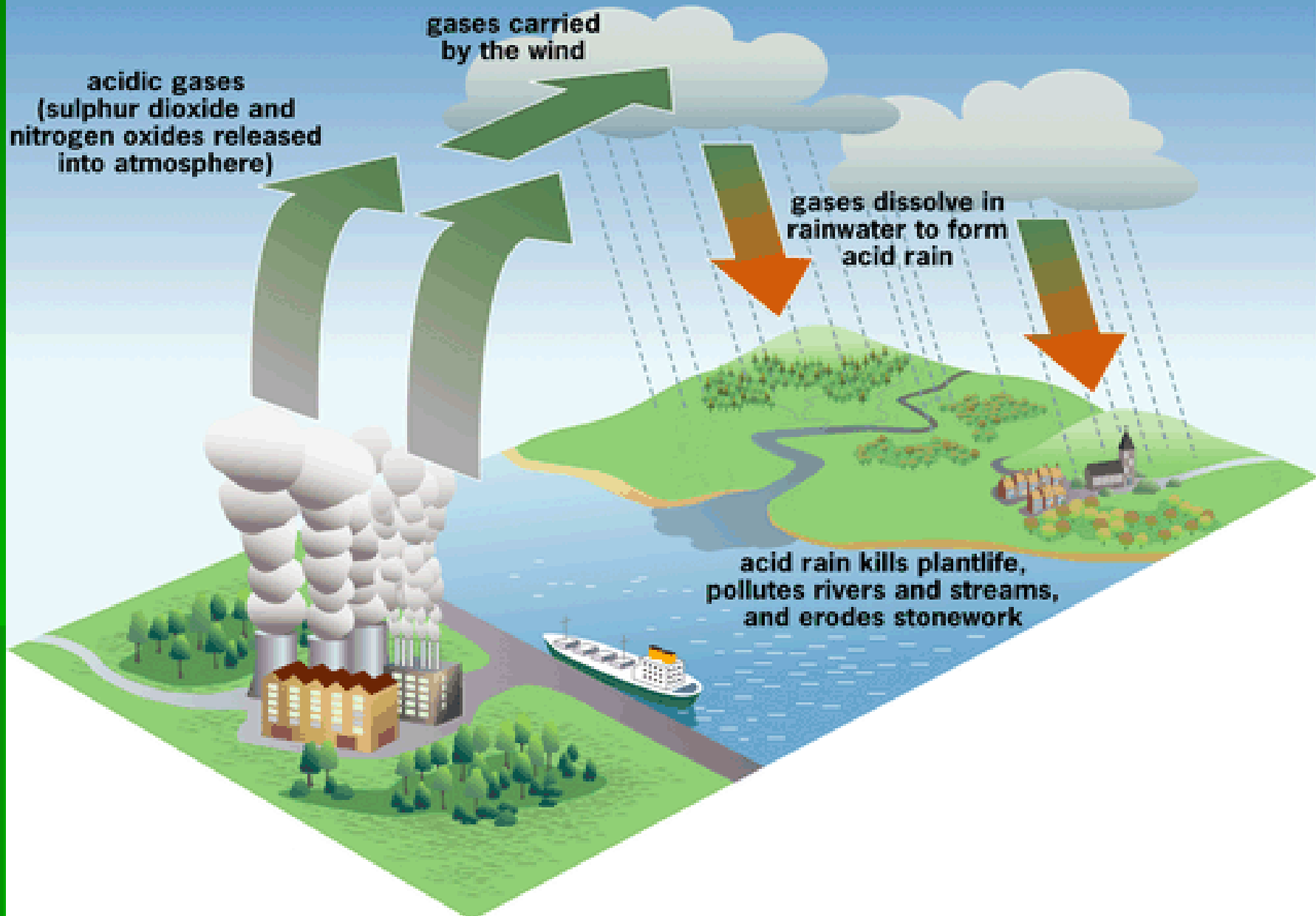
Acid Rain	Air Pollution	Chernobyl

SS6G9: Explain environmental issues in Europe

ACID RAIN

Acid Rain in Germany

- Main sources of Acid Rain:
 - Smoke from factories and power plants
 - Coal-burning factories
 - Automobile emissions



acidic gases
(sulphur dioxide and
nitrogen oxides released
into atmosphere)

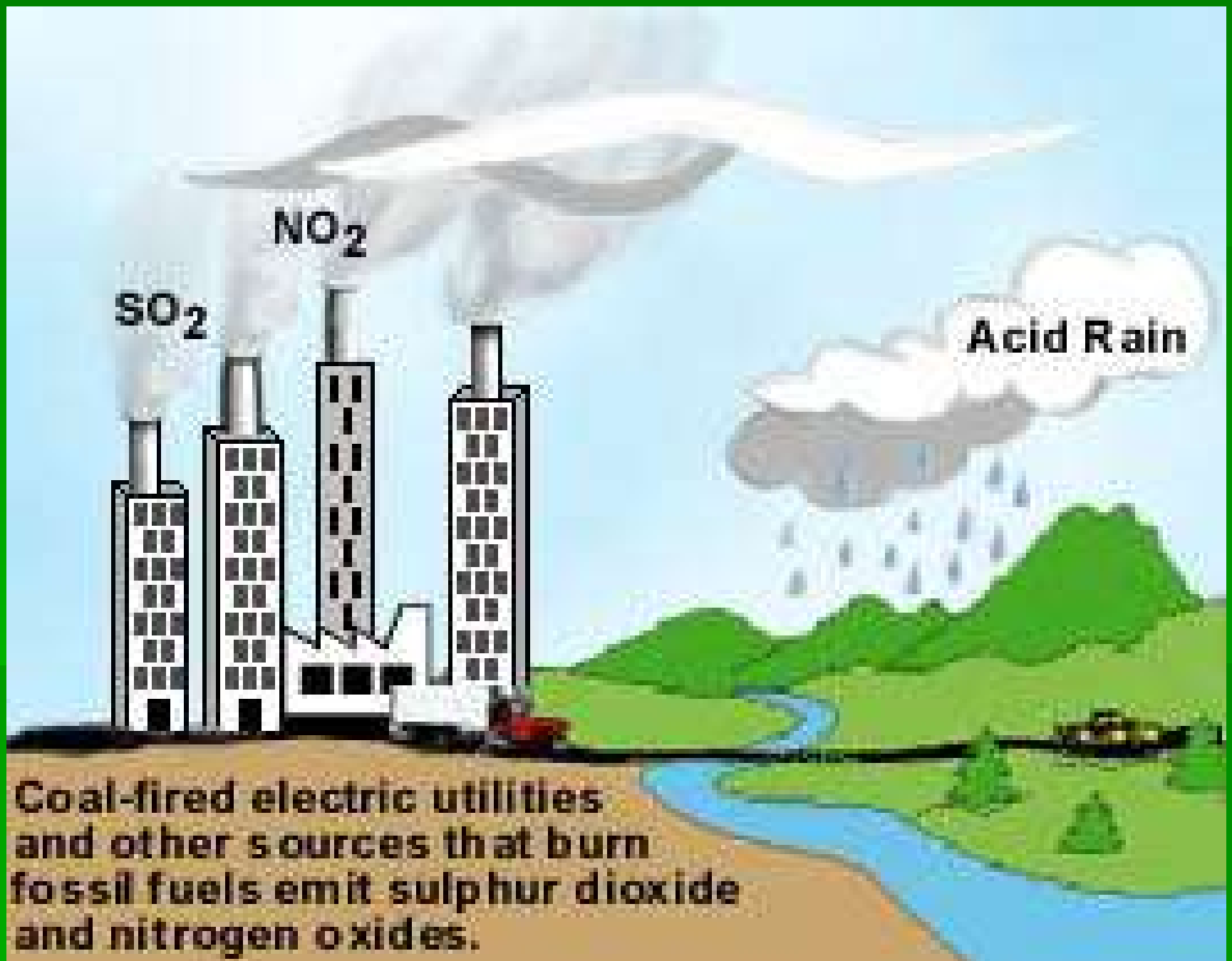
gases carried
by the wind

gases dissolve in
rainwater to form
acid rain

acid rain kills plantlife,
pollutes rivers and streams,
and erodes stonework

Why Germany?

- Toxic smoke manufacturing plants is carried by air currents to other places before it falls to earth as acid rain.
 - (ex. UK to Germany)
- **Leading exporter in cars, steel, and chemical products which depend on coal-burning factories**



Coal-fired electric utilities and other sources that burn fossil fuels emit sulphur dioxide and nitrogen oxides.

Effects of Acid Rain

- **ruined/diseased forests,**
 - Ruined nearly half of the Black Forest in Southwestern Germany
- **damaged soil and trees,**
- **pollutes rivers**
 - Ex. Danube and Rhine

Black Forest in Germany



- Effects of Acid Rain in Black Forest, Germany



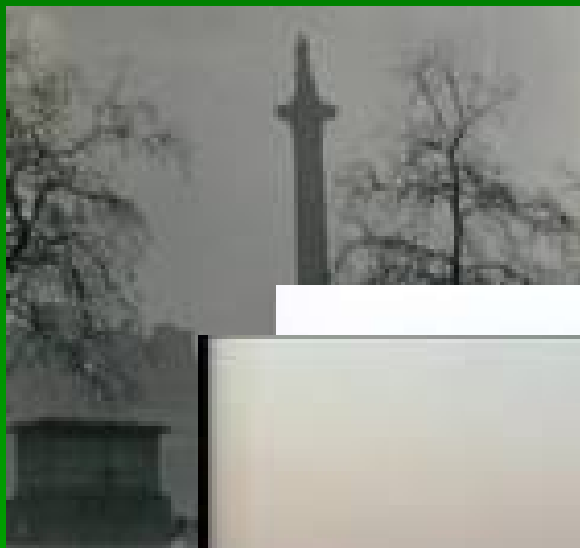
Solutions to Germany's Acid Rain problem

- Factories switching to cleaner fuels
- Decrease the use of fossil fuels like coal and oil
- Reducing automobile emissions
- Developing new types of energy like wind turbines and solar energy

Air Pollution

Great Smog in London

- Thick London smog happens when **water in the air mixes with smoke particles from a coal fire**
- After the Great Smog of 1952, the government created “smokeless zones” where only smokeless fuels could be used.



Main cause of air pollution in UK

- Industrial emissions
- Factory smoke
 - Major natural resources in UK: oil, natural gas, and coal



Problems with Air Pollution

- Burns the lungs, eyes, nose, and endangers human life
- Blackens buildings
- Threatens wildlife
- Keeps children and elderly inside

Solutions to Air Pollution in the UK

- **cleaner coals and forms of energy**
- **increased use of electricity**
- **the government regularly checks air quality**
- Air pollution in UK continues to cause Acid Rain in Europe


Effects of Air Pollution

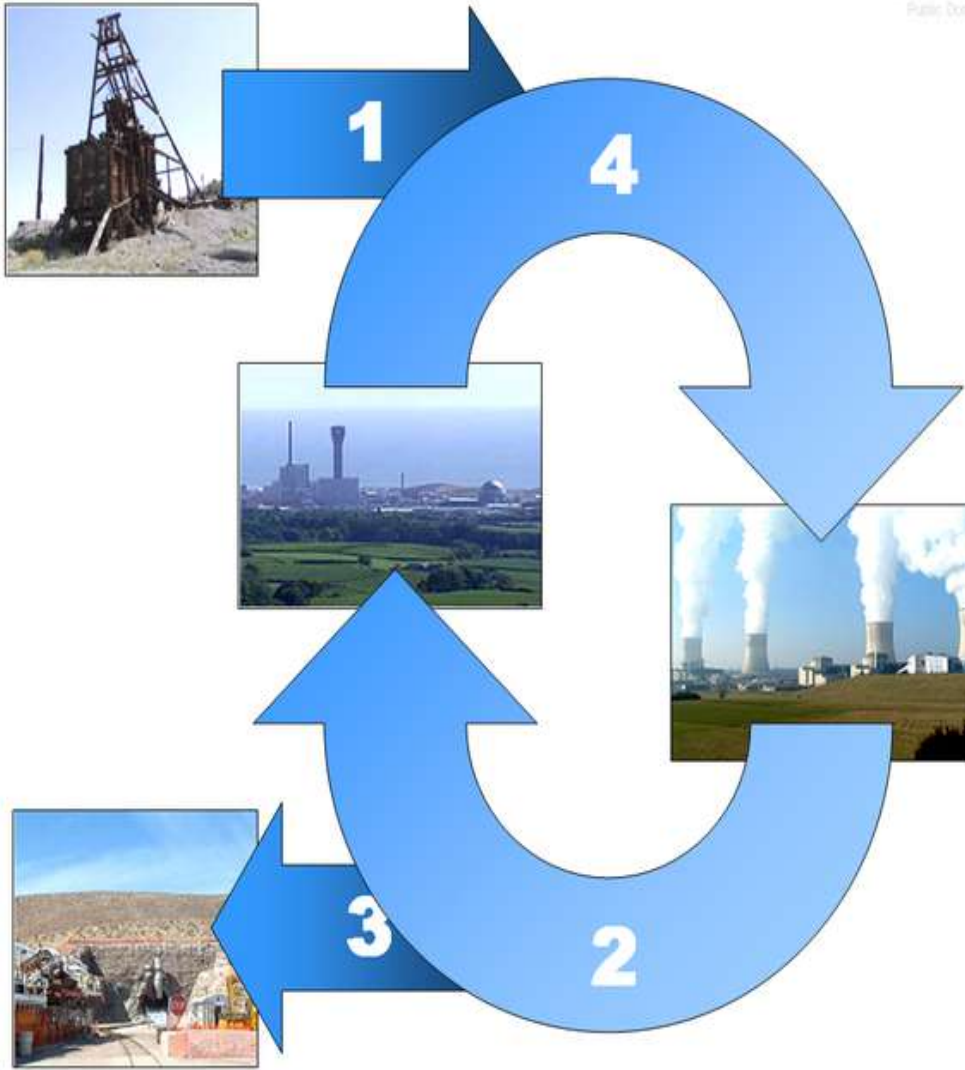
- AIR POLLUTION IN THE UK continues to cause ACID RAIN in other European Countries

Nuclear Disaster in Chernobyl Ukraine



Nuclear Power Plant is...

- a building that generates electricity
 - use nuclear fission reactions to heat water which produces steam  electricity
 - *13-14% of world's electricity comes from nuclear power*



- The nuclear fuel cycle begins when uranium is mined, enriched, and manufactured into nuclear fuel, (1) which is delivered to a nuclear power plant. After usage in the power plant, the spent fuel is delivered to a reprocessing plant (2) or to a final repository (3) for geological disposition. In reprocessing 95% of spent fuel can be recycled to be returned to usage in a power plant (4).

Chernobyl Nuclear Power Station in 1986

- One of the nuclear reactors **EXPLODED**
- Radioactive material surrounded the plant
- A 30 mile area around the station was abandoned by humans (known as the “exclusion zone”)

Effects of Nuclear Disaster

- Poisoning land and water
- Poisoning the air and falling on Northern Europe and Scandinavia
- Drinking water was unsafe for months

Effects of the Nuclear Disaster (cont.)

- People and animals contracted diseases and some died
- Turned the nearby forests brown and killed the trees
- Fish were not safe to eat

After the disaster

- Ukrainian government is NOW nuclear-free (since 2000)
- Reactor was buried in concrete (but the radioactive material is still not safe)
- Radiation (poison) spread to other countries and crosses border
- Continued Debate: How should nuclear waste be disposed of safely?

Essential Question:

- How have European actions changed the natural environment of Europe?

Topic Sentence:

Europe has different factors that has changed its natural environment.

Acid Rain in
Germany

Air pollution in the
U.K.

Nuclear disaster in
Chernobyl

Introduction Paragraph

- An essay intro should ALWAYS have the following parts:
- Hook
- Thesis Statement
- Reasons

Example:

- Did you know that there are horrible things that can change our world? Europe has different factors that have affected its natural environment, such as acid rain in Germany, nuclear disaster in Chernobyl, and air pollution in the UK.

Foldables

- For each flap in your foldable, you should have:
 - An answer to each question:
 - **Who** did it affect?
 - **What** happened?
 - **When** did it happen?
 - **Where** did it happen?
 - **Why** did it happen?
 - Effects?
 - A picture