Your team is:

Photosynthesis

Each cycle your team needs to:

Move 14 balls from ATMOSPHERE to PLANTS

Why? In the daytime plants absorb carbon dioxide (CO_2) from the atmosphere to use as food.

Your team is:

Respiration

Each cycle your team needs to:

Split into two groups:

Group 1 – Move 7 balls from PLANTS to ATMOSPHERE

Group 2 – Move 3 balls from ANIMALS to ATMOSPHERE

Why? Plants and animals obtain energy by 'burning' carbon-containing molecules such as sugars, releasing carbon dioxide (CO_2) into the atmosphere.

Your team is:

Combustion of fossil fuels

Each cycle your team needs to:

Do nothing! Stand by fossil fuels and have a well-earned rest!

Why? Before the Industrial Revolution only a tiny amount of fossil fuel was burned. The amount is so tiny that it does not register in this activity.

Your team is:

Release from the ocean

Each cycle your team needs to:

Move 11 balls from OCEAN to ATMOSPHERE

Why? Dissolved carbon dioxide (CO_2) comes out of solution and into the air at the ocean's surface.

Your team is:

Absorption into the ocean

Each cycle your team needs to:

Move 11 balls from ATMOSPHERE to OCEAN

Why? Carbon dioxide gas (CO_2) from the air dissolves into the surface waters of the oceans.

Your team is:

Eating

Each cycle your team needs to:

Move 5 balls from PLANTS to ANIMALS

Why? When animals eat plants, they are taking in carbon in biological molecules such as carbohydrates, fats and proteins.

Your team is:

Dying

Each cycle your team needs to:

Split into two groups:

Group 1 – Move 2 balls from PLANTS to DEAD ORGANISMS

Group 2 – Move 2 balls from ANIMALS to DEAD ORGANISMS

Why? When plants and animals die, their carbon content becomes available to organisms that will help them decompose.

Your team is:

Decomposition

Each cycle your team needs to:

Move 4 balls from DEAD ORGANISMS to ATMOSPHERE

Why? Organisms called decomposers feed off dead plants and animals – and release carbon dioxide (CO_2) and methane (CH_4) into the atmosphere.