

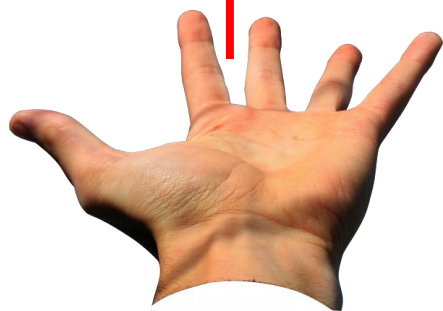
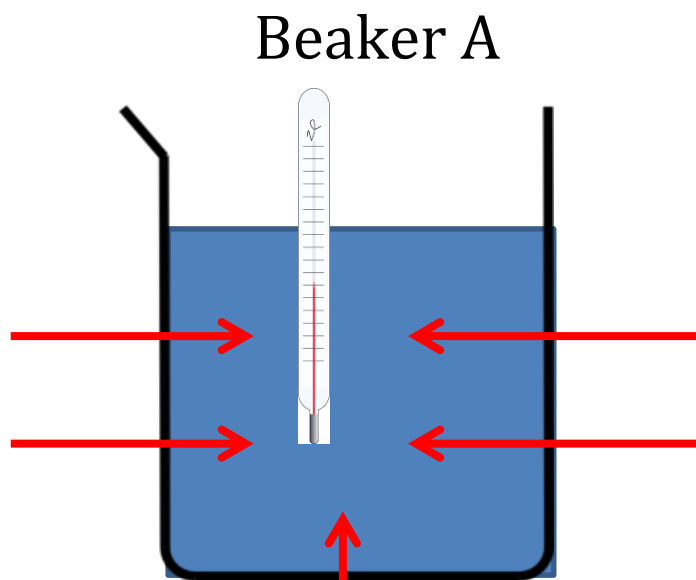
| | | | |
|---------------------------------|--|--------------|---|
| Topic | Introducing exothermic and endothermic reactions | Level | Key Stage 3 (or any course for students aged 11-14) |
| Outcomes | <ol style="list-style-type: none">1. Students can describe the energy changes in an endothermic and exothermic reaction2. Students can draw simple energy level diagrams for exothermic and endothermic reactions | | |
| Information for teachers | This activity probes students' understanding of exothermic and endothermic reactions. It should be used once students have seen and experienced simple exothermic and endothermic reactions in the lab. | | |



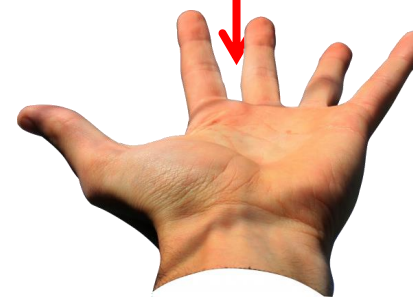
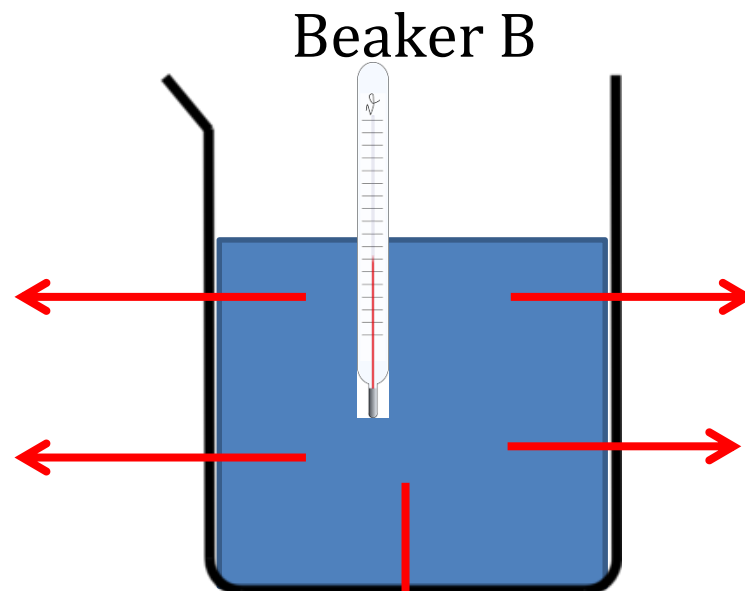
How many words can you think of that begin with
Ex or En?
What do these pre-fixes mean?

A reaction is taking place in each beaker.
The arrows represent energy transfer.

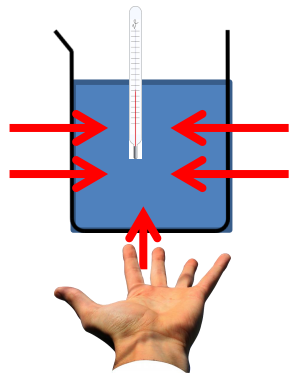
What would John feel and what would Jack feel?
What would happen to the temperature in beakers A and B?



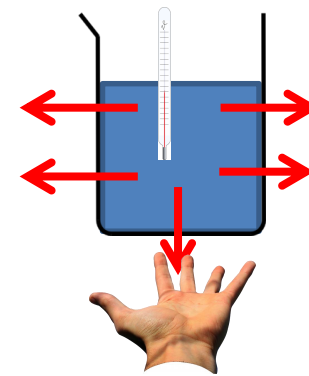
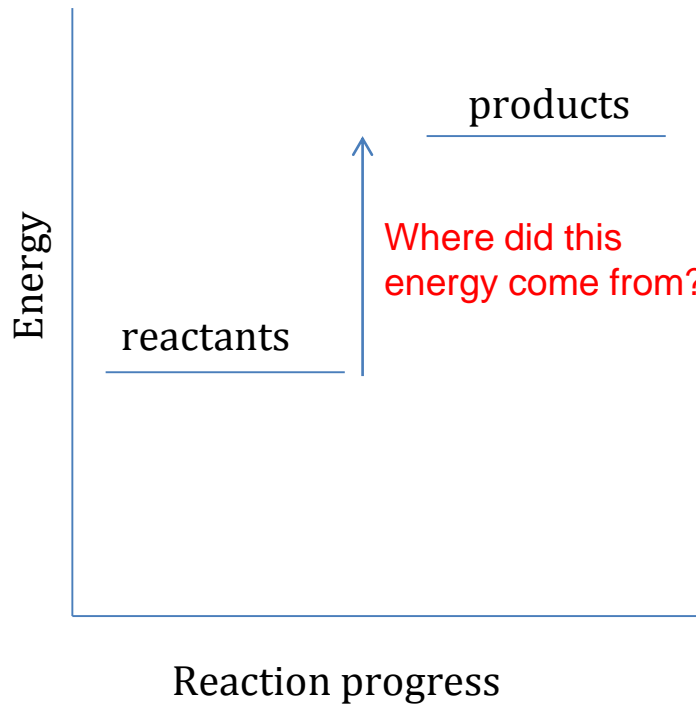
John



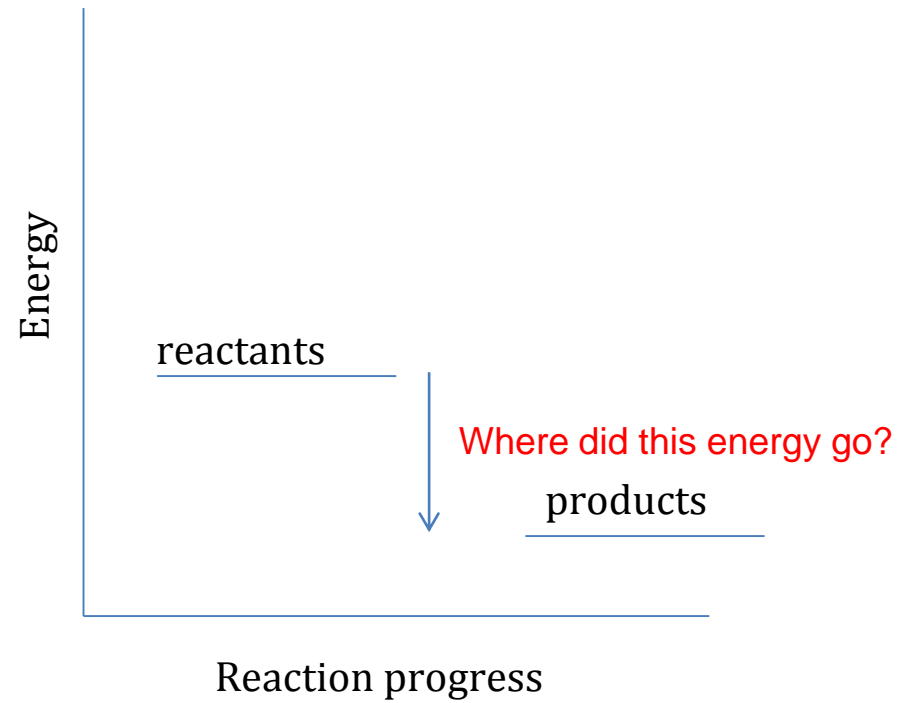
Jack



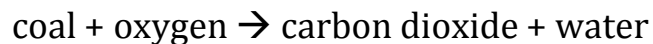
Beaker A is an **endothermic reaction**



Beaker B is an **exothermic reaction**



When coal burns, stored chemical energy is transferred by heating to the surroundings. The temperature of the surroundings increases. We can see this because the burnt coal glows red hot.



1. Complete the energy level diagram below by adding the products
2. Show the heat change for the reaction on the energy level diagram
3. Has the coal and oxygen gained or lost energy in this reaction?
4. Is this an endothermic or exothermic reaction?

