The Olympic Torch

Have you ever seen the Opening Ceremony for an Olympic Games on television? If so, you have probably realised it's one of the most exciting, memorable, and entertaining aspects of the Games, with fireworks, laser shows, amazing dances and other whiz-bang performances.

However, it is the traditional rituals associated with each Opening Ceremony that add that special and powerful feeling to the Olympics - the raising of the Olympic flag, the parade of athletes entering the stadium, and of course, the arrival of the torch and lighting of the Olympic flame in the cauldron.

Opening Ceremony Paris Olympics 2024
Photo: Laurence Griffiths/Getty Images

Minerals play a vital role in the making of the torch for the Olympic Games.
The following will help you find out more.

Information Sheet

- The Torch Relay
- Flame Aims
- Sydney 2000 Olympic Torch

Student Activities

- It's Come A Long Way
- A Torch with No Minerals

Information Sheet - The Torch Relay

The tradition of the Olympic torch goes back to the ancient Games in Olympia, Greece. There, a sacred flame was burnt at the altar of the Greek god Zeus while the competitions were held. It symbolised a striving for perfection and victory. The modern torch relay was introduced in the 1936 Berlin Olympics, where it was a huge success, and has continued until this day.

Lighting the Olympic Flame in Olympia, Greece 2024
Photo: Milos Bicanski/Getty Images

The Olympic Torch Relay begins in Greece weeks or months before the opening ceremony. The flame is ignited in a special ceremony that connects the traditions of the ancient and modern games in the ruins of the Temple of Hera in Olympia. A curved mirror is used to reflect and magnify the sun's rays to light the torch. The torch is then passed to the first member of a team of runners, called torchbearers. The torchbearers carry the torch around Greece on an 8-day, 3000 km journey to arrive at the Panathenaic Stadium in Athens (the site of the first Modern Olympics in 1896) for the official handover ceremony to the host country.

The flame is then transported to the host country, often via plane in a specially designed lantern to ensure that the flame is not extinguished. Once in the host country, thousands of torchbearers take turns to carry the flame, ending at the stadium of the opening ceremony where the last torchbearer lights the cauldron. The flame burns throughout the Games and is extinguished on the final day of the Games at the closing ceremony.

Who do you think will light the cauldron at the next Olympic Games? Why have you chosen this person?

There have been many ideas by the public about how the Olympic cauldron should be lit. Often it is with the final runner ascending steps leading up to the cauldron and lighting the cauldron with their torch. What would you suggest?

Australian Ron Clarke Lighting the Cauldron
1956 Melbourne Olympics

Information Sheet - Flame Aims

QUESTION: What are some of the factors to consider when designing an Olympic torch?

When designing a torch for the Olympic Games, it is important to ensure that the torch does (or does not do!) certain things.

For example, the designers aim for the torch to:

1. Burn brightly.
2. Be safe for the torchbearers and the on-lookers watching.
3. Stay alight in a variety of weather conditions including high winds, torrential rain, hail, and temperatures ranging from freezing to very hot.
4. Be environmentally friendly. The torch must use the least amount of fuel, produce the least amount of smoke and other pollutants, and consider recycling in its use.
5. Be lightweight and easy to carry.

2024 Paris Olympic Torch
Photo: International Paralympic Committee

Information Sheet - Sydney 2000 Olympic Torch

If you have read the information on The Torch Relay, you will realise that by the time the Olympic torch reaches the venue of the Opening Ceremony, it will have travelled a long way from Greece. However, it will also have come a long way in its development, from the very first ideas and designs about what it might look like and how it might work, to the impressive, finished product.

For each Olympic Games, the host country develops its own torch design - one that both looks great and also says something about that country's unique people and places. The designs of the torches certainly have changed over the years!

Sydney hosted the Olympic Games in 2000. The information below tells you about the design of the Sydney Olympic Torch.

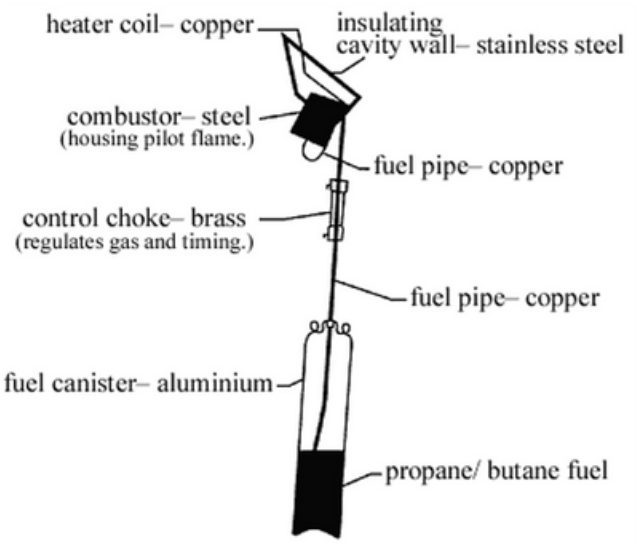
Design Features:

- Shape inspired by the Sydney Opera House sails
- The three layers represent fire, water, and earth
- The subtle curve of a boomerang
- Weighs just over one kilogram (about the same as a litre of milk)
- Is 72 cm long, making it easy to carry

Inner shell (silver) – stainless steel
Middle shell (blue) - aluminium
Outer shell (white) - aluminium

Torch shell designed in collaboration with the 'combustion system' engineers (the experts who decided what fuel to use and how to keep the flame alight).

Inside the Sydney 2000 Olympic Games Torch



* butane- used in cigarette lighters, propane or 'LPG' - used in gas-fired barbecues

Student Activity - It's Come A Long Way

Using the information sheets Flame Aims and Sydney 2000 Olympic Torch, correctly match the five flame aims with the various design features listed below. Some features could match with more than one Flame Aim.

Flame Aim	Design Features
Constant, bright, easy-to-light flame Safety Weather resistance Environmentally Friendly Easy to Carry	• The fuel canister is removable so it can be re-filled. • There is an in-built system that extinguishes the torch after 10 secs if it is left lying on the ground or is held upside-down. • The materials used to make the torch are lightweight. • The soot is burned away completely so that no smoke can come off the flame. • A wind and rain shield provides weather protection. • Each canister holds enough fuel to burn for 20 minutes. • The fuel can be stored as a liquid, taking up minimal room, therefore the torch can be small. • One end of the heater coil is immersed in the flame. Its other end heats the fuel so that it more easily and continuously turns into a gas which can be easily ignited. • The small pilot flame inside the torch stops the much larger outside flame from going out. • The torch has a cavity wall (double wall with a layer of air between). As air doesn't transfer heat very well, this cavity insulates the outside of the torch from the hot flame. • A wind and rain shield serves to spread the flame and make it more visible (without it, the flame would go straight up). • Butane and propane are easy to ignite (highly flammable) as gases.

Student Activity - A Torch with No Minerals

Working on your own, in pairs or small groups,design your own Olympic torch.

It could be for a future Olympic Games, or maybe you'd like to redesign a torch from a past Olympics. The catch is, imagine we couldn't mine for minerals – so your torch will have to be made from other materials!

Present your ideas on a poster and accompany your torch design with your own statement about how your design aligns with the values and traditions of the host country and the Olympic Games.

The official statement for the Sydney 2000 Olympic Torch Relay is below:

"The Olympic Games are about being part of something bigger than yourself, sharing the history, spirit, ceremony and tradition of the most enduring and admirable human event of all time and the Torch Relay literally and figuratively embodiesthis sense of sharing - from the simple connection of two individuals as the torch is passed from one to the next to the sharing of the spirit of the Torch Relay with all Australians and the entire world." Olympic Torch Relay for the Sydney 2000 Olympics.