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PART 1

1.1. INTRODUCTION

1.2. GENERAL INFORMATION ABOUT VANCOUVER 2010

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1.4. SUSTAINABLE DEVELOPMENT, A SHARED RESPONSIBILITY: PROJECTS TO BE CARRIED OUT WITH YOUR PUPILS
1.1. INTRODUCTION

From 8 October 2009 until 11 April 2010, the Vancouver Games are under the spotlight at the Olympic Museum. The Vancouver 2010 exhibition, devoted to the XXI Olympic Winter Games, looks at the event from a sustainable development perspective, focusing on respect for the environment, positive economic spin-offs, the integration of local populations and exploration of their cultures. A visit to the Museum is an opportunity to discover the exhibition and its educational programme by participating in activities relating to sustainable sport.

The purpose of this educational kit is to provide documented practical examples of sustainable development linked to the Vancouver Games. It can be used before, during and after a visit to the exhibition, or completely independently. It contains:

- information for teachers on the selected theme. This information will enable teachers to learn about the Games, understand their impact in terms of sustainable development and arouse their pupils’ interest in the subject;
- suggested projects to be carried out with pupils;
- a description of the exhibition for teachers wishing to visit the Museum.

When the different components of sustainable development environment, economy and society are dealt with in the dossier, they are indicated by a pictogram:

![Environment Pictogram](image)

**WHY DISCUSS THE VANCOUVER OLYMPIC GAMES IN THE CLASSROOM?**

Currently a fashionable phrase, sustainable development is a frequently used notion which is not always correctly understood. Examining it from an original angle – the Olympic Games – gives teachers the opportunity to look at this concept in an in-depth, illustrated way, using various case studies.

An event of international renown, the Olympic Games can be used to generate immediate interest among pupils and to tackle the concept of sustainable development. People often only see the tip of the iceberg: the two weeks of competition. However, it takes several years to prepare for the Games, from the announcement of the host city to the event itself. In addition, the Games have a considerable impact for many years after they are held. There are therefore numerous aspects of sustainable development that can be examined. Tackling this subject in relation to the Games is a way of looking behind the scenes of this event and understanding the practical implications of sustainable development (See next page, Summary of themes addressed in the kit).

Urban environments, rural landscapes, the economy and the life of local residents are all affected by the Games. Many links can be made with subjects taught in schools. Whether in geography, environmental awareness or economics, the Vancouver Olympic Games constitute a practical and original case study, providing a chance to assess the Games’ impact on indigenous populations, the venues’ impact on the environment and the implications for the employment sector.
Emblem
The emblem of the Vancouver Olympic Games is inspired by the stone sculptures of the Inuits.

Torch
The fuel in the torch is a blend of propane and isobutane.

Mascots
The mascots are inspired by Canadian fauna and the legends of the First Nations.

A car-free highway
During the Olympic Games, the highway between Vancouver and Whistler will be closed to cars, with only buses transporting athletes and spectators allowed to use it.

Hydrogen-powered buses
During the Games, 20 hydrogen-powered buses will use the highway between Vancouver and Whistler. A real-life platform for testing this promising technology.

Offsetting CO₂
In order to offset CO₂ emissions caused by the Games, investment is being made in projects aimed at removing some of this gas from the atmosphere or preventing its emission.

Rainwater collection
Some of the rainwater collected from the roof of the Richmond Olympic Oval is reused for toilet flushing, while the remainder is diverted to a pond used for the irrigation of the surrounding plants.

Use of residual heat
The heat generated by ice production in the Richmond Olympic Oval will be used to heat water, as well as for the building’s heating and cooling systems.

Infested wood for a recycled roof
Even though it was thought to be useless, wood damaged by a pine beetle epidemic was used in the construction of the roof.

A new sport and recreation centre
The Richmond Olympic Oval will be converted into a sport and recreation centre after the Games and will form the centrepiece of a new district.

Composting of wood waste
Wood waste is composted with flower seeds in order to promote regrowth of vegetation.

Cypress preservation
The original route of the ski runs at Whistler Creekside was amended in order to preserve old yellow cypresses.

Saving frogs
Frogs were moved by hand to prevent them being killed during the construction of the ski runs.

Improvement of sports facilities
Local communities will benefit from the improvement of the sports facilities at Whistler Creekside.

Plant species preserved
During the construction of an artificial snow reservoir at Cypress Mountain, 12 species of plants of local importance were moved by hand to other, unaffected areas.

New winter sports trails
After the Games, the local populations will enjoy new trails and infrastructures at Cypress Mountain.

Venue construction by First Nations companies
Several venue infrastructures were built by companies employing Aboriginals.

Aboriginal art projects
More than 30 pieces of Aboriginal art decorate the venues.

Promotion of sport among First Nations youngsters
Aboriginal athletes have posed for a series of posters aimed at promoting sport among young Aboriginals.
ENVIRONMENT
- Preserving natural resources
- Limiting pollution

ECONOMY
- Encouraging local bodies to take up challenges
- Developing new technologies
- Long-term exploitation of infrastructures

SOCIETY
- Integrating local populations
- Showcasing the cultural wealth of the country
- Promoting personal development

Reducing energy consumption
THE FLAG
The maple leaf represents the numerous trees of this species in Canada. The American Indians were familiar with the edible properties of maple sap.

MAP OF CANADA
1.2. GENERAL INFORMATION ABOUT VANCOUVER 2010

BASIC INFORMATION

WHERE?

Vancouver has the honour of hosting the 2010 Winter Games. This city is located on the Pacific coast in the Canadian province of British Columbia.

WHEN?

12 to 28 February 2010

Four years after the Olympic Winter Games in Turin (Italy); four years before the Olympic Winter Games in Sochi (Russia). These are the XXI Olympic Winter Games. The Winter Games are only numbered in accordance with when they actually took place, unlike the Summer Games, which are numbered every four years, whether they were held or not.

WHAT?

The competitions

The programme of the 2010 Vancouver Games contains seven sports, 15 disciplines and 86 events. The only new event is ski cross, which is part of the freestyle skiing discipline. Ski cross promises to be an exciting event due to the speed of the competitions and the group races.

Opening and Closing Ceremonies

The Opening and Closing Ceremonies are the main celebrations held during the Olympic Games. They provide a chance for the host city to convey the messages it wants to put across. This year, the focus is on Canadian diversity, whether linguistic or cultural; the indigenous groups in particular will be featured prominently.

WHO?

5,500 athletes and team officials from 80 countries will participate in the event. Olympians qualify through events organised by the International Federations governing their sport, although the National Olympic Committee of their country is responsible for actually entering athletes for the Olympic Games.

HOW?

The Vancouver Organising Committee (COVAN in French and VANOC in English) is responsible for organising the Games. Its objective for this edition is to organise Games that promote sustainable development.

The Games will be staged at nine competition venues, of which six are new, two have been substantially renovated and one will remain virtually unchanged, with just the addition of new changing rooms.

The main point of interest is that all these venues will be reused after the Games and are designed to leave a lasting heritage for the local populations.

Educational objectives:

- To discover various aspects of Canada through the icons of the Games.
- To present the Vancouver Olympic Games.
LOCATION OF COMPETITION VENUES

- WHISTLER
  - Alpine Skiing
  - Biathlon
  - Bobsleigh
  - Cross-Country Skiing
  - Curling
  - Freestyle Skiing
  - Ice Hockey
  - Ice Sledge Hockey
  - Luge
  - Nordic Combined
  - Short Track Speed Skating
  - Skeleton
  - Ski Jumping
  - Snowboarding
  - Speed Skating
  - Wheelchair Curling

- CYPRESS MOUNTAIN

- VANCOUVER

- RICHMOND
THE GAMES’ EMBLEM

What is an Olympic emblem?
The Games’ emblem is a symbolic graphic image which provides a point of identification for each edition of the Olympic Games. Chosen by the Organising Committee of the Olympic Games (OCOG), it is combined with the Olympic rings. It may appear on Games merchandise, publications and venue decorations.

Entitled ‘Ilanaaq’, the emblem of the 2010 Vancouver Games is inspired by Inuit stone sculptures known as inuksuit (inukshuk in the singular). These structures are held in balance by the combination of several stones stacked one on top of the other.

This symbolism is designed to reflect the Games, which are meant to be an example of team work. Inuksuit resemble human silhouettes and used to serve as landmarks for travellers. Nowadays, they represent symbols of friendship, hope and hospitality.

Each colour in the emblem has been carefully selected: blue for the sky, ocean and coastal mountains, green for the forests, red for the maple leaf of the Canadian flag and yellow for sunrise. The various facets of Canada are therefore represented.

The choice of the emblem helps to value Aboriginal culture. It is a way of involving the indigenous populations in the Games at a symbolic level.
THE PICTOGRAMS

What are the pictograms for?
The pictograms are icons representing the different sports in the programme. They comprise simple silhouettes and are designed to be universally understood. The pictograms were produced for the 1948 Games in London, although they did not become official until Tokyo 1964. Each host country adds its own personal touch for each edition of the Games.

There are 19 pictograms for the Olympic Games in Vancouver. Their design is inspired by modern sport photography, pop culture, fashion illustration and Japanese comics. These pictograms contain an unusual dynamism, placing particular focus on the athletes in order to convey their heroic qualities.

THE TORCH

Close attention is paid to the design of the torch, which must meet certain ecological criteria.

The Vancouver torch is inspired by the vast open spaces of Canada and the traces left in the snow and ice by winter sports. Its shape is fluid and undulant. Canada’s size is expressed by the dynamic shape of the torch and the presence of the maple leaf. The maple leaf also has an important functional role as an air intake hole ensures that the flame burns brightly. The Games mottos (“With Glowing Hearts” and “Des plus brillants exploits”) and emblem are also engraved on the torch.
The materials used in the torch are a white composite finish, an aluminium core and a stainless steel burner. The torch must be light enough to be carried easily. It weighs 1.6kg and is 94.4cm high. Designed to cope with the bitterly cold weather in Canada, it can be used at temperatures between -50° and +40°. To minimise its impact on the environment, the fuel used is a blend of propane and isobutane. Propane burns more cleanly than petrol and isobutane helps to limit damage to the ozone layer and the greenhouse effect.

Designing a torch requires enormous technical expertise. The Bombardier company, which specialises in transport and aviation, was responsible for the industrial design. There are numerous constraints in the design process, as the torch must be:

- light enough to be handled by people of all ages;
- made in large quantities;
- suitable for different modes of transport (canoe, dog sled, snow-bike, horse, tractor, etc.).

In addition, the flame must:

- be easy to transfer between torches;
- burn for at least 12 minutes;
- be visible in all weather conditions.
The torch relay

Since 1964, the flame has been lit in Olympia, Greece. It is then carried by thousands of people to the cauldron in the Olympic stadium.

For more information on the torch relay, its history and symbolism, consult our Information Kit (see bibliography), p.59.

For this edition of the Games, the Olympic flame will be lit on 22 October 2009 and the relay across Canada will begin on 30 October 2009, finishing on 12 February 2010, finishing on February 12, 2010 with the Opening Ceremony of the Games. Apart from the starting point in Olympia, the rest of the relay will take place in Canada. It is the longest relay to be contained within a host country in the history of the Winter Games. During these few months, 12,000 people will carry the flame in 1,020 communities, covering more than 45,000km by land, sea and air. More than 90% of Canadians will therefore have an opportunity to see the flame, a symbol of peace, fraternity and friendship. The relay theme, “A Path of Northern Lights”, refers to the flame winding its way across the whole of Canada, lighting the road to Vancouver.

The relay will place the spotlight on many different communities. For example, the flame will visit Alert, in Nunavut province, the northernmost inhabited community in the world. It will also pass through Old Crow, which has no road access and is thought to be the home of the most ancient peoples of North America. This will enable VANOC to highlight the cultural diversity of Canada and involve the Aboriginal peoples in the Games. With sustainable development in mind, an unprecedented level of Aboriginal participation will characterise the planning and organisation of these Games: more than 300 Indigenous people will participate in the relay!
THE MASCOTS

Inspired by Canadian wildlife and the mythological creatures of the First Nations of north-west Canada, the official mascots of the Vancouver Olympic Games are Miga and Quatchi, while Sumi is the Paralympic Games mascot. They have a special friend, Mukmuk, who enjoys the Games with them but is not an official mascot. Their design reflects the idea of sustainability, both by taking nature into account and by incorporating indigenous culture.

Miga

This young female sea bear lives in the ocean off Vancouver, British Columbia. Miga is part Kermode bear (very rare species of white bear not to be confused with the polar bear), part killer whale. The sea bear is directly inspired by the legends of the local First Nations, according to which the killer whale turns into a bear when it arrives on land. The Kermode bear or Spirit Bear was transformed by the creator Raven to remind people of the Ice Age. The killer whale, meanwhile, is important in local indigenous art, representing travellers and guardians of the sea.

Quatchi

This mysterious imaginary being is a young sasquatch, part man, part monkey, also inspired by First Nations legends. He represents the possibility of undiscovered species in the vast Canadian wilderness.

Sumi

An animal spirit who lives in the mountains of British Columbia, Sumi wears the hat of the killer whale, the wings of the mythical thunderbird and the furry legs of the black bear. He is a particular fan of the environment and paralympic sports. The name “Sumi” comes from the Salish word “Sumesh”, which means “guardian spirit”.

A common theme in the legends and art of the First Nations of the north-west coast of Canada, transformation symbolises the kinship between the human, animal and the world of spirits. The killer whale represents travellers and guardians of the sea, while the thunderbird is one of the most powerful supernatural creatures, capable of creating thunder simply by flapping its wings, and the bear is often a symbol of strength and friendship.

Mukmuk

Companion of the official mascots, Mukmuk is an extremely rare marmot, unique to the mountains of Vancouver Island. This little creature, who loves to eat, is aptly named, since “muckamuck” means “food” in Chinook, which was a language used for trading amongst the First Nations.
1.3. SUSTAINABLE DEVELOPMENT AT THE VANCOUVER OLYMPIC GAMES

DEFINITION AND STATUS IN THE OLYMPIC MOVEMENT

The Vancouver Olympic Games represent an important subject for a case study on sustainable development because it is the first time that an OCOG has created a department dedicated to sustainable development. Previous Games organising committees have adopted environment management systems, but these have never incorporated the social or economic aspects.

WHAT IS SUSTAINABLE DEVELOPMENT?

The concept of “sustainable development” entails a global strategy that takes into account:

- the environment, economy and society;
- future generations;
- all the world’s inhabitants.

This notion particularly came to the fore in 1987, when it was defined by the UN’s Brundtland Commission in its report “Our Common Future”.

Educational objectives:

- To understand the concept of sustainable development.
- To recognise the human, ecological and economic implications of an event such as the Olympic Games.
- To be capable of determining whether an event respects the principles of sustainable development and, if it does not, to propose alternatives.
- To behave with respect for others and available resources.

1 Taken from: http://www.bve.be.ch/site/fr/print/index/aue/bve_aue_ent_nektbe.htm
In practical terms, it is an approach with temporal and spatial elements, in which the dimensions of environment, economy and society can be broken down as follows:

**Environment:**
- Reduce energy consumption;
- Limit pollution;
- Protect species diversity;
- Conserve natural resources.

**Economy:**
- Promote trade;
- Encourage international investment;
- Establish fruitful partnerships;
- Create jobs;
- Improve living standards.

**Society:**
- Encourage citizen participation;
- Promote social integration;
- Create solidarity;
- Support culture;
- Foster education and training;
- Enhance health and safety.

The IOC’s policy on the environment and sustainable development has two main objectives:
- to run awareness-raising and educational activities about the importance of the environment and sustainable development in sport;
- to encourage Olympic Games which respect the environment and promote sustainable development.

**Sydney 2000: the first genuinely “green” Games**
Although the first Games to be given the “Green Games” label were the 1994 Winter Games in Lillehammer, it is now acknowledged that they were not “green” in every respect. Although the bobsleigh track was buried in order to avoid altering the landscape and located away from people’s homes to prevent problems caused by ammonia, which is used for refrigeration and gives off a putrid smell, the construction of the ski jumping ramps did damage the environment. These structures are currently being debated and alternatives are being sought in order to prevent excessive harm to natural environments.

The Environmental Guidelines for the Summer Olympic Games, produced by the Sydney OCOG, were the first of their kind and served as a planning framework for the event. Environmental achievements included the renovation of Sydney Olympic Park, the biggest urban renewal project in Australia at the time, integrated waste management, unprecedented use of public transport and the development of an energy policy. Since that edition, the Games have always been planned with the environment in mind.

For more detailed information about OCOG activities relating to the environment and sustainable development, see our website: [www.olympic.org](http://www.olympic.org) (the Movement/Promotion of sustainable development).

> The Vancouver Olympic Games represent a further milestone because they are taking into account all the facets of sustainable development, not just the environmental aspect!

**What initiatives has the Olympic Movement taken?**
Since the early 1990s, the Olympic Movement has increasingly taken the environment and sustainable development into account in its projects. In 2004, respect for the environment even became the third official pillar of Olympism with sport and culture.
**VANOC’s sustainable development objectives**

VANOC has established six objectives for organising the Games in accordance with the sustainable development concept:

- accountability;
- environmental stewardship and impact reduction;
- social inclusion and responsibility;
- Aboriginal participation and collaboration;
- economic benefits;
- sport for sustainable living.

Sustainability is seen as a tool for transforming the social, economic and environmental effects of the Games into lasting local and global benefits.

Dividing the notion of sustainable development into these different components is meant to make it easier to implement them practically. The Vancouver Games in 2010 promise to be an unprecedented benchmark in terms of their consequences for sustainable development. But how will these objectives be achieved? How will the Vancouver Games impact the environment, economy and society? What projects have been set up? These questions each provide an opportunity to consider the Games from a global point of view and from a sustainable development perspective through this kit. These various aspects will be explored in this document through actual case studies.

**APPLICATIONS**

Without claiming to be exhaustive, the following pages aim to give teachers some examples of practical actions that have been taken to promote sustainable development in the context of a major event such as the Olympic Games. Using the Olympic example, teachers will then be able to encourage their pupils to learn about the social, economic and environmental implications of a project, both locally and globally, as well as in the long term.

The 2010 Vancouver Games involve 5,500 athletes and team officials from more than 80 countries, 10,000 media representatives and 25,000 volunteers, along with an expected 1.6 million spectators and 3 billion television viewers! Such a huge event is not without consequence. Since 2 July 2003, when Vancouver was chosen as host city, the municipalities of Vancouver and Whistler, the province of British Columbia and even the Canadian government have been preparing for the event.

Compared to media representatives, volunteers and spectators, athletes and team officials represent the smallest group!

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1. TRANSPORT

As well as the two weeks of competition, the Games require several years of preparation and their impact can be felt for decades afterwards.

In order to cope with the thousands of visitors, much work has to be done prior to the Games: development of the venues, construction or improvement of facilities, creation of housing, particularly for the athletes and officials. All of this work creates the need for countless journeys as the necessary building materials are transported.

Journeys also need to be made by athletes, officials, journalists and spectators travelling to participate in or watch the Games themselves. Whether these are domestic journeys between different parts of Canada (from one venue to another) or international journeys (from abroad), the journeys made by these thousands of people generate CO₂ emissions and have serious consequences for the environment. From a sustainable development perspective, it is therefore especially important to study transportation and to find suitable ways of transporting all these people to their destination, in order to minimise the ecological side effects to the environment.

Carbon-neutral Games

One of the objectives of Vancouver 2010 is to generate no net increase in greenhouse gases. A two-fold ambition: to be the greenest Games ever held and to become a model for future host cities. In order to achieve this, the organisers are particularly focusing on the development of public transport.

LOCAL TRAVELLING

A car-free highway!

Green transportation is the leitmotiv of these Games. The Sea to Sky highway that links Vancouver to Whistler (120km from Vancouver) will be closed to cars when the Games begin in February. There will be nowhere for cars to park in Whistler. Athletes, spectators and journalists will only be allowed to travel in the 1,000 buses that will operate during the Games. Bus tickets will also be sold at the same time as tickets for the events themselves in order to encourage spectators to use public transport.

Ask pupils what means of transportation they use: a good way of getting them to evaluate the consequences of their actions and to make them aware of possible alternatives.

PROCESS

- 9 years
  Cities submit their applications (applicant cities)

- 8 years
  Selection of candidate cities

- 7 years
  Election of the host city; an organising committee is created (OCOG)

- 6 years
  Preparations begin

Olympic Games
  D-day
  Maximum duration of 16 days

Legacy
  Impact on the future
Sustainable development has positive spin-offs. In order to discover them, think about the benefits created by the absence of cars or excessive traffic. How do pupils feel about a bus driving on an empty road? Calmness, serenity and relaxation are among the outcomes of such a measure. Now consider the opposite scenario by imagining a journey on a congested road.

In order to measure the efforts made to support sustainable development, a comparison may be drawn with the 1996 Games in Atlanta, when the public transport network was hugely inadequate and caused endless traffic jams. The two metro lines and buses had insufficient capacity to transport athletes and spectators to the different venues. Compare this with an example from pupils’ everyday lives.

Hydrogen-powered buses
For the first time, 20 hydrogen-powered buses will be in operation at the Games. With room for 37 seated and 60 standing passengers, they run on electricity, which means they are extremely quiet. They function using a fuel cell, fed by hydrogen that is stored on the roof and which produces an electric current when mixed with air. It only takes three minutes to refuel. These buses have no exhaust pipes and their emissions are mainly composed of water vapour. They are therefore particularly environment-friendly.

Hydrogen-powered vehicles, a promising solution for the future
The main benefit of this new technology lies in the absence of greenhouse gas emissions when the vehicle is in motion, in contrast to modern engines that are powered by fossil fuels (petroleum, gas). However, the large-scale production of hydrogen remains a crucial issue for the future success of this technology. Since it does not exist as such in nature, it has to be produced. Although the use of hydrogen does not generate any greenhouse gases, hydrogen production does produce such gases when it is created from natural gas, a process which releases CO₂. And this is how most hydrogen is produced. Nevertheless, the hydrogen produced for the Vancouver Games bus network is green because it is created using electrolysis, the separation of certain substances using an electric current.
The Olympic Games, an opportunity to develop new energies

The Games are a golden opportunity for the Canadian government to finance such projects based on innovative technologies. As well as the pride felt by the local community, the launch of these buses during the Games will give them international visibility. As well as the impact on the environment, the consequences for the economy could be just as huge. If the bus network runs without any technical problems on a daily basis, it will set an example for the whole world and the impact could be global as it would uncover a potential new market. For although Europeans, Japanese and Americans are already working on fuel cells, this technology remains expensive and can only be exploited on a large scale if the market grows. Looking ahead, the European Union estimates that the use of this technology could lead to a 40% cut in transport-related petroleum consumption by 2050.

INTERNATIONAL TRAVELLING

Aeroplanes pollute...

While transport between venues may claim to be green, the same cannot be said of international air travel. An estimated 220,000 tonnes of carbon dioxide emissions will result from aeroplane flights. These CO₂ emissions, although an indirect consequence of the Games, are the most significant of all, since total CO₂ production is estimated at 330,000 tonnes, only 110,000 tonnes of which are directly due to the Games¹. These 110,000 tonnes include emissions caused by the competitions themselves, as well as all those generated since the host city was announced in 2003. After the Games, a study will be published in order to establish the level of emissions actually generated.

CO₂ emissions caused by the Games: 330,000 tonnes

...yes but ...

The fact that the Organising Committee has tried to estimate how much carbon dioxide will be produced reflects its desire to offset both direct and indirect emissions. It is therefore adopting a global approach to the problem.

> Sustainable development means taking into account an entire event, without breaking it up into segments.

Since it is impossible to organise Games that generate no carbon dioxide at all, VANOC decided to sign agreements aimed at neutralizing all CO₂ emissions. The process is simple: an investment is made in projects designed to remove CO₂ from the atmosphere or to prevent its emission. These activities may be aimed at improving energy efficiency or producing wind, solar or geothermal energy. Projects linked to forestry or soil use could be ways of locking up CO₂. An economic challenge facing local businesses!

¹The David Suzuki Foundation, a Canadian environmental protection organisation, produced these estimates, which were verified by the PricewaterhouseCoopers firm.
Some previous organising committees have already taken similar action, but none has offset the gases emitted outside the two weeks of competition. This time, even the gases emitted by aeroplanes will be offset. The strategy adopted for these XXI Winter Games also backs up the plans of the city of Vancouver, which is targeting a 20% cut in its greenhouse gas emissions by 2020.

Using practical examples, demonstrate that everyone can contribute to climate protection:

- in the Chinese province of Ningxia, rural populations make their own solar cookers so that they no longer need to use coal-fired ovens, which damage the climate;
- instead of burning agricultural waste or leaving it to rot in the fields – a practice that releases greenhouse gases – people in southern India now reuse this biomass as a fuel in order to produce electrical energy: this waste is now burnt in a power plant.

More details at www.myclimate.org

---

**Good to know!**

How much CO₂ is released by different means of transportation?

<table>
<thead>
<tr>
<th>100km travelled by</th>
<th>releases CO₂ weighing</th>
</tr>
</thead>
<tbody>
<tr>
<td>aeroplane over a distance of less than 800km</td>
<td>31kg</td>
</tr>
<tr>
<td>aeroplane over a distance of more than 800km</td>
<td>20kg</td>
</tr>
<tr>
<td>petrol car</td>
<td>21kg</td>
</tr>
<tr>
<td>diesel car</td>
<td>16kg</td>
</tr>
<tr>
<td>motorbike with 4-stroke engine</td>
<td>10kg</td>
</tr>
<tr>
<td>bus</td>
<td>9kg</td>
</tr>
<tr>
<td>motorbike with 2-stroke engine</td>
<td>8kg</td>
</tr>
<tr>
<td>regional train</td>
<td>8kg</td>
</tr>
<tr>
<td>express train</td>
<td>3kg</td>
</tr>
<tr>
<td>trolley bus and tram</td>
<td>2kg</td>
</tr>
</tbody>
</table>
2. THE VENUES: THREE EXAMPLES UNDER THE MICROSCOPE

The location of buildings, the construction materials and the ski run routes: these are all linked to the Olympic Games sustainable development strategy. Each venue is designed in accordance with a whole range of interweaving criteria that are intrinsic to sustainable development. A way of showing pupils that a combination of simple actions often has major consequences.

The few examples mentioned below highlight the different operations carried out during venue construction in order to ensure that the process complies with sustainable development objectives. An environmental assessment and smart site selection are necessary before work begins.

See also suggestions for further study, p.56.

RICHMOND OLYMPIC OVAL

Designed to host the speed skating events, the Richmond Olympic Oval is a new venue located 14km south of Vancouver city centre.

See map, p.12.

It has been built in a location already adapted to house a community health and recreation complex. The choice of location is important because it supports the preservation of untouched natural zones.

Particular attention was paid to environmental management and the reduction of environmental impact. The venue is designed to be one of the most ecological in the world:

Flushing the toilet with rainwater is possible!

Rainwater from the roof is collected and reused. Most of it is used for flushing toilets. The rest is collected in a pond in front of the building and used to irrigate surrounding plants. The quality of this water is naturally enhanced by marsh plants that act as filters.

Medals for the venues

At a very early stage, VANOC consulted the Canadian government, the province of British Columbia, the city of Vancouver and the municipality of Whistler to ensure that they would respect the Leadership in Energy and Environmental Design (LEED) evaluation system during the venue construction phase. This North American green building rating system takes into account several criteria, including energy efficiency, reduction of water consumption, heating system efficiency and the use of local and surplus materials. Buildings can qualify for four levels of certification: certified, silver, gold or platinum.
Ice produces heat!
The production of ice for the skating rink generates residual heat, which is used inside the building for hot water in particular, as well as for the heating and cooling systems. Since the venue size is equivalent to six international ice hockey rinks, the rate of recycled heat is very high.

Why does ice production generate heat?

The Richmond Olympic Oval is also an example to follow in terms of economic impact:

Infested wood for a recycled roof
The roof is constructed from wood damaged by pine beetle infestation. Measuring two hectares (approximately 100m x 200m), this roof is the largest surface to be built using this infested wood. It disproves the assumption that the wood was useless. This project could easily inspire others and thus reduce the economic impact of the pine beetle infestation in the province of British Columbia.

Greater understanding of sustainable development is often achieved through simple observation. Pupils can look at how their refrigerator works at home, giving off heat in order to produce cold air.

Recycled wood roof at the Richmond Olympic Oval.
In order to help pupils recognise the difference between a healthy tree and an infested one, why not visit a forest to observe trees in their natural environment?

As well as the environmental and economic aspects, the venue in Richmond is designed to leave a lasting legacy over time. It provides an opportunity to promote sport for sustainable living:

**A new centre in the heart of a new district**

After the Games, the Richmond Oval will be converted into a building devoted to sports and well-being. It will include two international ice rinks, eight gymnasiums, a 200m running track and a fitness centre measuring more than 2,000m². Designed for both recreational and competitive use, the Oval will host training and competitions in several paralympic sports, such as wheelchair curling, wheelchair basketball and rowing. It will form the centrepiece of a new residential district that will also include commercial and public amenities.

Spending most of their time under the bark of pine trees, mountain pine beetles are small insects measuring less than 1cm. These invertebrates attack weak or old trees and, since they promote the regrowth of new conifers, they are normally beneficial for forests. However, the hot, dry summers and mild winters of British Columbia have contributed to the proliferation of these insects, resulting in a pine beetle epidemic. So far, millions of damaged pine trees have been destroyed in the province, even though they are the most commercialised species, which is why it is so important to find uses for them, such as for the roof of the Richmond Olympic Oval.
WHISTLER CREEKSIDEN
Renovated for the Olympic Games, this venue will stage the Alpine skiing and paralympic Alpine skiing events. It is located in the Coast Mountains, 120km north of Vancouver. See map, p.12.

Since Whistler Creekside is located at an existing ski resort, the infrastructures (buildings, chairlifts, cable cars) can be used as they are. There is no need to build new ones. There are also other ways in which the venue’s impact on the environment has been reduced:

From tree to compost...
The wood waste from felled trees is chipped and then composted and reused on site, mixed with seeds of native flowers to promote the growth of new vegetation.

A right turn
The original course of the ski runs was changed in order to give maximum protection to riparian vegetation. There is therefore a sharp right turn near the top of the course. Much less vegetation needed to be removed than originally planned when the environmental assessment was carried out. Large numbers of old yellow cypresses, previously earmarked for felling, were preserved. This superb turn has even turned out to be the most interesting part of the course for skiers. Respect for the environment can produce major thrills!
Victory for the frogs
Between the men’s and women’s downhill courses runs Boyd Creek, a habitat for the tailed frog. The creek crosses the area where the ski runs finish, before ending up in Whistler Creek. Part of the creek therefore had to be moved and a channel was built. The channel provides an ideal shelter for the tailed frogs which were caught and relocated by hand.

Finally, the work carried out in preparation for the Games promotes sustainable sport:

Unbeatable ski runs
The work carried out will enable the local communities to benefit from improved sports facilities after the Games. The ski runs will be suitable for recreation, training and competition.

The tailed frogs of the Rockies are a protected and endangered species. Very small, they are between 2 and 6cm long and live in fast-moving, tree-lined mountain streams. They are very attached to the place where they breed and do not move from year to year. They are an important link in the food chain because they feed on molluscs, spiders or insects, which are considered pests, and they themselves are eaten by numerous aquatic animals.
CYMPRESS MOUNTAIN

To the west of Vancouver, this new venue is adjacent to the district of West Vancouver, in Cypress Provincial Park. It will stage the freestyle skiing and snowboarding events.

See map, p.12.

Like Whistler Creekside, the facilities are built on existing ski runs, thus minimising the impact on the environment. Other measures have also been taken for this purpose:

Scientific progress

In July 2007, VANOC and the Cypress community met at Cypress Provincial Park to salvage and relocate samples of 12 plant species. These wetland species of local significance were discovered during the environmental assessment of the site in a marsh where an artificial snow reservoir was to be built. The plants were therefore moved by hand to other unaffected wetlands similar to those in which they were found.

As for the frogs in Boyd Creek, safeguarding these species came at a cost: technical and human resources had to be paid for. This shows a genuine long-term commitment and a real investment for the future.

The food chain may be discussed in class, in order to show pupils the importance of species preservation. Going through all this effort makes sense!

Consider biodiversity. Species variety is a great asset for our planet. Plants are particularly used for producing medicines, which is why they are important!
As for each venue, consideration has been given to ways of promoting sustainable sport:

**More runs, more sports...**

The facilities will be used after the Olympic Games, with more ski runs available in winter for recreational and competitive users. There will also be a new halfpipe, an artificial snowmaking system and water reservoir, lighting, a new freestyle skiing site and a parallel giant slalom course.

The artificial snow used at this venue may appear to be an ecological mistake. At present, this is the best solution, since there is no environment-friendly alternative. In a few years’ time, more suitable options may be discovered. However, it must be remembered that sustainable development means using the resources of the present while taking into account all three dimensions (environmental, economic and social) rather than just one of them. For example, this system will make it possible for the venue to be used after the Games, which will have positive economic consequences for the region as it increases its potential for tourism. The impact on local residents will also include the creation of jobs. Sustainable development is not a sign of decline, but of progress!
3. THE FIRST NATIONS, KEY PLAYERS IN THE OLYMPIC GAMES

An essential aspect of sustainable development is the social dimension. The Vancouver Games will pay particular attention to the integration of the indigenous population. Using this example, teachers can deal with the impact of social inclusion on an event’s success and the development of the communities concerned.

See also suggestions for further study, p.56.

What are the First Nations?
The 630 First Nations have lived in North America for around 30,000 years. They currently own 2,500 reserves, which cover less than 1% of the surface area of Canada. Nevertheless, many of these people have chosen to live in towns and cities. High unemployment levels, housing problems and low education rates are prevalent in the reserves, which is why many have moved to urban areas. Torn between their ancestral traditions and modern urban life, the First Nations are permanently split between two ways of life and are losing their traditional points of reference.

Four of the Host Nations are known as “Host First Nations” for Vancouver 2010. These are the Tsleil-Waututh, Lil’wat, Musqueam and Squamish First Nations, on whose traditional territories the Games are being held.

First Nations rap artist
An artist wavering between tradition (clothes) and modern culture (rap).

History

30,000 BC
First Nations present in North America

~1000
The Vikings visit Labrador and Newfoundland in Canada

1492
Christopher Columbus lands on San Salvador in the Bahamas archipelago in America

1534
Jacques Cartier lands in Gaspé in the Canadian province of Quebec

1763
British conquest of Canada
LOCATION OF THE FOUR HOST FIRST NATIONS

The Vancouver Games are meant to be Games for the whole of Canada, including minorities: Inuits, Métis and First Nations. The First Nations are even official partners of the Games. They represent an essential element of the sustainability programme and an important first in terms of Games organisation. On 30 November 2005, a historic protocol was signed with the Four Host First Nations, covering several issues:

- professional training and skills development;
- guarantee of lasting economic, social and cultural opportunities;
- showcasing of their cultures and traditions;
- creation of a sustainable sport legacy for young people.

The inclusion of the First Nations in the various decision-making processes forms part of the social component of sustainable development, the aims being to communicate openly with the people concerned, promote cultural diversity and organise inclusive, accessible Games. An unprecedented level of indigenous participation is expected, whether as athletes, volunteers, employees, entrepreneurs, artists, performers, spectators or cultural ambassadors.

Role of the First Nations in the Olympic Games

Faced by the dual existence currently experienced by the First Nations, who are torn between traditional beliefs and modern Canadian culture, the Games are a source of hope. They offer them international visibility and provide an opportunity to overcome some of the problems they are facing. The Olympic Games will enable them to revisit their traditions and anchor them in the modern world.
PROFESSIONAL TRAINING AND SKILLS DEVELOPMENT – GUARANTEE OF LASTING ECONOMIC, SOCIAL AND CULTURAL OPPORTUNITIES

The employment of First Nations companies will revitalise the local economy:

**Venue construction**

*Resource Business Ventures (RBV)*, a local firm set up as a partnership between a company majority owned by the Lil’wat Nation and another local company, cleared the site at the Whistler Olympic Park. Having delivered on time and on budget, it was awarded further contracts, including a multi-million dollar contract in 2006 to build, at the Whistler Olympic Park, the biathlon stadium, competition trails, roads, bridges, underground services and various buildings.

This experience has had a positive impact in terms of employment and training. It has also enabled the company to engage in a process of sustainable economic diversification, as Troy Bikadi, RBV manager, testifies:

> "The sweetest part for me is the capacity-building - the training and skills development. We see green guys, like carpenters’ apprentices and machine operators, come in and get trained. We’re building infrastructure and diversity that will take us beyond 2010. From a company perspective, this is our taking-off point. I don’t see us looking back."

*Newhaven Construction*, a Squamish Nation-owned company, has also played a significant role in the Whistler venue by building a lodge for hikers and technical buildings, as well as the Squamish Lil’wat Cultural Centre in the municipality.

**Possibility of studying the employment market.** A local company may be used as an example: who is employed? What are the spin-offs for the region? What skills are the workers acquiring? What are the benefits for the employer? How much do the employees earn?

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SHOWCASING OF INDIGENOUS CULTURES AND TRADITIONS

Art is very important for the First Nations: totem poles, masks, but also two-dimensional art with designs on canoes, paddles, hats, baskets, dishes, spoons, drums or even ceremonial clothes. It therefore seemed quite obvious that the First Nations should make an artistic contribution to the Olympic Games.

First Nations canoe
An example of contemporary use of traditional motifs.

The First Nations welcome you!
More than 30 works of original indigenous art will decorate the competition venues and other Olympic Games infrastructures. These works emphasise the rich culture of the Aboriginal peoples and represent a welcome message to visitors to these territories that have been occupied by the First Nations for thousands of years, inviting them to share their culture.

Rainwater collection system
The rainwater collected for flushing toilets flows over these fish. Fish were and, to a certain extent, remain a vital source of food for the peoples of Canada’s north-west coast.

Internationally acclaimed Musqueam artist Susan Point has designed artwork for the rainwater collection system at the Richmond Olympic Oval.

Another example, at the entrance to the UBC Thunderbird Arena, is a disc representing a thunderbird by Musqueam artist Joe Becker. This imaginary creature, after which the building is named, is the most powerful of all the spirits, representing the chief.

Encourage meetings with local artists. Visit a workshop, interview artists or analyse their work. What messages do these artists convey? Are they inspired by traditions? Why? Do they feel part of society?
CREATION OF A SUSTAINABLE SPORT LEGACY FOR YOUNG PEOPLE

In order to encourage youngsters to live out their dreams, indigenous athletes who embody the Olympic values of perseverance, camaraderie and sportsmanship are featured on a series of posters. The “Find Your Passion in Sport” poster campaign aims to encourage Aboriginal youngsters to become involved in sport by identifying with these heroes.

Campaign for sustainable sport

So far, six people have participated in this campaign, which aims to promote a sustainable sport legacy for young people. Profile of Travis Jones and Sammy Kent:

- **Travis Jones**, young Métis curler from northern British Columbia.
- **Sammy Kent**, First Nation Alpine skier from the Yukon.

Eighteen-year old Travis Jones is already a fierce competitor in the junior division, competing in Canada and training in Germany. His achievements include captaining the PCA Juvenile Super League champions. In curling, he explains:

“[You have to be disciplined. It’s more of a mind game. If you’re not in the frame of mind for the game, you’re not going to win. You can’t be mad, you can’t be down – you have to keep your calm. It’s mental strength over physical strength.](http://www.vancouver2010.com/en/sustainability-and-aboriginal-participation/sport-and-youth/find-your-passion/travis-jones/)

Sport therefore requires self-control and persistence. Travis is constantly striving to improve, frequently attending training camps. However, these are not his only qualities, since he also shows a great spirit of camaraderie. Rather than focusing purely on his own achievements, he also helps others to do their best, contributing some of his time as a volunteer for various junior sports programmes.

For Sammy, sport and Alpine skiing in particular is a question of work, talent, and friendship:

“I love alpine ski racing because it’s a friendly competition that has a direct relation to effort and skill level.”

Sammy notably won the northern British Columbia junior Alpine skiing championship, as well as all his events at the Arctic Winter Games in Fort McMurray, Alberta. And in 2009, he finished sixth and ninth in two International Ski Federation giant slalom races.

These stories show the extent to which sport can help people find fulfillment and be a positive energy source. These young athletes are role models who can inspire other young people in difficult situation.

Design featured on all snowboards used by members of the First Nations Snowboard Team (FNST). The FNST and its partners are establishing a legacy for Aboriginal youth by providing opportunities using winter sport as a vehicle for social change. FNST is the only snowboard body that is entirely operated by Aboriginal snowboarders. Designed by Xwalacktun, a First Nations artist.
The following pages contain ideas for projects that you can carry out with your pupils aged between 6 and 16. They are all linked to sustainable development and serve as an invitation to action.

See also suggestions for further study, p.56.

In order to facilitate the implementation and coherence of the projects, instructions are given for each project and these must be followed. In addition, several suggestions are proposed to ensure that the project is conducted from a sustainable development perspective. However, these are meant to be indicative: they do not all have to be taken into account, indeed others may be added according to the project, the group’s own ideas and the circumstances.

The concept of sustainable development is complex. Whatever the pupils’ age, they will not know exactly what this notion involves. It is therefore a good idea to discuss it first in class. Nevertheless, since it is a fashionable expression at the moment, pupils will probably have vague images or ideas in their minds about what sustainable development is. Teachers can therefore kick off this discussion by asking pupils for their ideas. Asking them what sustainable development means to them is an opportunity to affirm what they already know and to draw up a common definition by compiling their various suggestions.

In order to respect the social dimension of sustainable development, it is important that the projects are carried out together and that all pupils participate, without exception. This is a chance to highlight the different opinions, personalities and cultures within the class itself.

YOUR PROJECTS ON OLYMPIC.ORG?
If you would like to showcase your pupils’ work, send us your ideas. The most promising will be published on our website!

Conditions to be met
Provide:
• a brief description of the project and its objectives;
• photos illustrating the creation and implementation of the project;
• some comments and impressions from pupils and teachers;
• the name of the school, class and teacher, and the number and age of the pupils.

Send these to edu.museum@olympic.org.

Make sure that pictures are in JPEG format and comments in Word format.
Examples of projects that could be carried out with children or teenagers.

**RECYCLED ART FOR SUSTAINABLE SPORT**

**Instructions:**
Create a collective work of art inspired by sport, using only salvaged materials.

**Suggestions:**
Collaboration with a local artist:
- Painter
- Sculptor
- ...

Choice of materials:
- Sports equipment
- Items collected from nature (dead leaves, dead wood, stones, etc.)
- ...

Promotion of the work:
- Exhibit it in the classroom and invite families to this event
- Sell it to finance a class project
- ...

**REDESIGNED SPORT FOR SUSTAINABLE PRACTICES**

**Instructions:**
Redesign a sport of your choice so that it respects sustainable development criteria. Decide what equipment is needed, suggest locations where the sport could be played and draw up some rules.

**Suggestions:**
Playing equipment:
- Made by pupils
- Recycled
- Locally produced
- Hand-made
- ...

Location for playing the sport:
- Near public transport
- Accessible to disabled people
- Free entry, no charge
- Respects fauna and flora
- No infrastructure required
- ...

Participants:
- The whole class, without exception
- People training for a professional reintegration
- Disabled people
- Foreign communities
- ...

Promotion of the event:
- Organise a tournament and invite families and friends in order to promote this sustainable sport
- In order to launch this redesigned sport, play it for the first time alongside another event
- ...

If you only have a small amount of space and time, suggest a sustainable game (cup-and-ball, diabolo, etc.) instead of a sport or ask your pupils to think up a sustainable sport (drawing, diagram, discussion) without carrying out the full project.
SUSTAINABLE SPORTS EVENT

Instructions:
Organise a sports event that meets sustainable development criteria. Decide who should participate, what services are required and where the event should be held.

Suggestions:
Event location:
• Near public transport
• Accessible to disabled people
• Respects fauna and flora
• Generates minimum energy consumption
• Possibility of sorting waste on site
• …

Catering:
• Food with no or biodegradable packaging
• Fairly traded food
• Healthy food (plenty of fruit and vegetables)
• Seasonal products
• Local catering services
• …

Participants:
• The whole school, without exception
• People training for a professional reintegration
• Disabled people
• Foreign communities
• Volunteers
• …

Promotion of the event:
• Use email or recycled paper
• By volunteers and officials for greater visibility
• Publication of a media release in order to attract people to the event
• Organisation of an exhibition of local artists alongside the sports event
• Financing by sponsors whose activities support sustainable development
• …

If you only have a small amount of space and time, organise a fête or simply ask your pupils to create a file, illustrated with drawings of all the elements necessary for a sustainable event.
PART 2

2.1. VANCOUVER 2010 AT THE OLYMPIC MUSEUM: STEP-BY-STEP VISIT
2.1. VANCOUVER 2010 AT THE OLYMPIC MUSEUM:
STEP-BY-STEP VISIT

This step-by-step visit is a suggestion for discovering the Vancouver 2010 exhibition. It provides teachers with the tools needed to explore the exhibition independently, providing information on scenography, focusing on some of the key elements of the areas visited, and suggesting questions to ask pupils. Teachers can thus find their way around easily and work effectively with their pupils.

The visit begins on the paved area in front of the main entrance:

- **Totem pole**

The exhibition, spread over three floors, is composed of four separate zones.

**Level -1:**

- **The icons of the Games (zone 1)**
  Presentation of the graphic universe of the Games: the emblem, pictograms, torch, mascots and medals.

**Level 0:**

- **The torch relay (zone 2, in the entrance hall)**
  Journey through the 10 provinces and three territories of Canada, stopping at key points along the torch relay route.

- **The Olympic venues (zone 3)**
  Discover the various competition venues from a sustainable development angle.

**Level +1:**

- **Challenging traditions (zone 4)**
  Contemporary works inspired by the traditional First Nations arts.

**Organisation of visit**

Each teacher guides his or her own class, introducing the various zones and asking the pupils to observe, look for information and give their views as they go along. There can be a discussion either at the end of the visit, or once back in the classroom.

**FOCUS ON...**

**QUESTIONS**

**INFORMATION**
ZONE-BY-ZONE VISIT

Before starting the visit, stand beside the totem pole by Jim Hart, on the paved area in front of the main entrance. This introduces the Vancouver 2010 exhibition.

TOTEM POLE BY JIM HART

Jim Hart is a Haida artist, from one of the First Nations in British Columbia (based in the Queen Charlotte Islands). He sculpted this pole for The Olympic Museum on the occasion of the Games. This totem pole is typical of the peoples of the north-west coast of America.

Sculpted out of a yellow cedar trunk, the totem pole represents different animals: working upwards: salmon – bear – killer whale – salmons – eagle. Totem poles generally have several meanings, and the iconography can refer to the events of one family. Their function may be commemorative: recalling a historic event or erected in memory of a particular person. When they are located outdoors, it is generally in front of houses, while the indoor ones are part of the building.

The presence of this totem pole shows how much the Games in Vancouver are helping to increase awareness of the First Nations. The iconography chosen by Jim Hart reflects the values of the Haida people. By adding the five Olympic rings, the artist is symbolising the meeting between Olympism and the First Nations.

What is it? What can you see?
Which animals are represented?
What do you think this object means?

Useful information

Salmon: a key source of food for the people on the north-west coast of Canada. For many centuries, their society was dependent on this fish.

Bear: a symbol of strength and family solidarity. By observing bears, aboriginal peoples obtained information on medicinal plants. The bear is thus regarded as a teacher, doctor and protector.

Eagle: A symbol of power and prestige, but also of peace and friendship, there are large numbers of eagles on the north-west coast of Canada. The eagle is used in ceremonies as a sign of welcome.

Killer whale: This marine mammal has teeth, and according to local legends, whales can capture canoes and drag them to the bottom of the sea, where their occupants turn into whales themselves.

Copper: used by the First Nations for currency and as sign of wealth. The older the copper, the more valuable it is.

Olympic rings: five rings to represent the five continents and the universality of the Olympic Movement.
Scenography: The wave-shaped layout leads the visitor from the ocean to the mountains, as an allusion to the situation of Vancouver. The dominant colours are green and blue, in a reference to the environment, one of the components of sustainable development. These colours are part of the Look of the Games in Vancouver. This is the decor in which the icons of the Games are displayed.

Invite your pupils to talk about the Olympic Games. What do they know about them generally, and what do they know about Vancouver 2010?

The first modern Olympic Games were held in 1896 (Summer Games). The first Winter Games were held in 1924. For each edition of the Games, there is an emblem, a torch, medals, mascots and pictograms. These elements help create the identity of every edition of the Games, as they are different every time.

Do you recognise these animals? Why do you think they are a mixture of real and imaginary animals?

The animals refer to the universe and mythology of the First Nations.

The mascots and licensed products transmit the image of the various editions of the Games. Schuss (a stylised skier) made an unofficial appearance at the 1968 Winter Games in Grenoble. It was not until 1972 that the first official mascot was launched.

Do you recognise the symbol formed by juxtaposing the two posters? Why do you think it uses these colours? What might the shades of green and blue refer to? What is the point of having a graphic language for each edition of the Games? Based on the colours used, what do you think are the intentions/objectives of the host city?

Each host country develops a graphic identity aimed at unifying the “look” of the Games on publications, licensed products, the official web site, uniforms and the decoration of the city and the sports venues. This visual unification reveals the national identity of the host country and the way it sees itself. This graphic line can be found on the posters for the Olympic and Paralympic Games. When combined, the two posters form the emblem of Canada: the maple leaf.
ZONE 1
THE ICONS OF THE GAMES

**EMBLEM — THE INUKSHUK**

What does this sculpture represent?
Who are the Inuits?
Where do they live?

The emblem is based on the inuksuit of the Inuits, a people who live in the Arctic regions. Still today, 80% of the population lives on hunting and fishing. But the climactic changes and Western way of life have repercussions on Inuit customs and modify their existence.

**PICTOGRAMS**

Why are pictograms used?
Do you know how many sports are on the programme of the Olympic Games?
Can you identify the sports represented?

Pictograms are used for their universality. Their purpose is to create a common language that everyone can understand. The Olympic Winter Games programme currently consists of seven sports and 15 disciplines:

1. skiing (Alpine skiing, cross-country skiing, ski jumping, Nordic combined, freestyle skiing and snowboarding);
2. skating (speed skating, figure skating and short-track speed skating);
3. bobsleigh (bobsleigh and skeleton);
4. luge;
5. biathlon;
6. ice hockey;
7. curling.

But there are 19 pictograms. They represent the 15 disciplines + four events: the parallel giant slalom, snowboard cross, aerials and ski cross – a new addition for 2010 – in freestyle skiing.

**THE TORCH**

What is a relay?
What is the point of a relay?

The Olympic torch relay is a link between the ancient Games, held in Olympia, in Greece, and the modern Games. It recalls the sacred truce proclaimed on the occasion of the ancient Games. At that time, all wars were halted before, during and after the Games, to enable the athletes and spectators to travel to and from Olympia safely.

Today, the torch heralds the start of the Games and sends a message of peace and friendship around the world.

End of the first zone: Through the icons, the pupils have become familiar with the Games in Vancouver and some aspects of the host country’s culture.
Scenography: a “forest” made up of hollow tree trunks is planted in the entrance hall.

Each trunk symbolises a stage of the Torch Relay. Inside the trunks are images and information on the places visited by the Relay. The presence of these trees recalls the importance given to the environment. The trees used for the exhibition will be recycled afterwards.

The various stages of the Relay focus on nature, history, architecture, culture and the aboriginal peoples of Canada. The Torch Relay’s route through various First Nations communities reflects the desire to rehabilitate them and make them an integral part (the social component) of the sustainable development programme created for these Games.

The date for lighting the torch in Olympia is 22 October 2009. After being taken to Canada by air, it will travel all over the country from Victoria to its final destination, the BC Place Stadium in Vancouver, on 12 February 2010. At the Opening Ceremony, the flame will light the cauldron, which will remain lit throughout the Games.

Map of the Relay, p.16.

The pupils become relay runners! They will set off to learn out about Canada, collecting information on the country as they go, before arriving in Vancouver, where the Games will be held.

The journey is in a clockwise direction!
Why are the waves in the Bay of Fundy so big?

The Bay of Fundy has waves of over 15 metres! Its funnel shape is responsible for this spectacular phenomenon. A legend of the Mikmaq First Nation people explains the phenomenon in the following way. In order to take a bath, the god Glooscap asked a beaver to build a dam on the edge of the bay. But a whale was trapped and, in its efforts to escape, destroyed the dam by using its tail so violently that the waves are still felt today.

How many First Nations people are there in this town?

Winnipeg is home to the largest group of First Nations people in Canada: more than 50,000. At the confluence of the Red and Assiniboine rivers, La Fourche, the centre of Winnipeg, was formerly at the heart of a huge trading network and a stopping-off point for the aboriginal peoples.

How many relay runners will there be for these Games in Vancouver?

The flame will have travelled 45,000 km and been carried by 12,000 people! The flame has now reached its destination. Vancouver, the third biggest city in Canada, is a city of striking contrasts. It is situated between the shores of the Pacific Ocean and the Coast Mountains. Its huge skyscrapers stand next to First Nations totem poles, and although it is very built up, it also benefits from the huge Stanley Park.

After this relay, the pupils can have their photo taken with the Vancouver torch.

End of the second zone: The pupils have added to their knowledge about Canada and its indigenous peoples. Having "arrived" in Vancouver, they can now discover the competition venues.
Scenography: The zone is composed of four modules, and its shapes are based on those of crystals. They correspond to the venues in:
- Vancouver;
- Richmond, 14km from Vancouver;
- Cypress Mountain, located close to Vancouver;
- Whistler, 120km from Vancouver.

Some general information is given at the entrance to the zone:
- awarding the Games to Vancouver; venues and sports; the LEED standards; building architecture; preservation of fauna; and a projection on sustainable development and the Games in Vancouver.

For each module, more specific information is given.

We suggest that you visit this zone in an anticlockwise direction.

Remind the pupils that Vancouver 2010’s aim is to organise sustainable Games in the broadest sense of the term. The venues have been built so as to have the smallest possible environmental impact and produce positive economic and social effect.

Invite the pupils to undertake a mission to the venues and identify the actions linked to sustainable development. Ask them to pay particular attention to the distances covered, means of transportation used and impact on the landscape of the competitions. What information have they found, and what conclusions have they reached?
The roof of the Richmond Olympic Oval is the largest area ever built using damaged wood. It is a great example of recovery which could inspire others. The environmental impact of this epidemic could thus be reduced.

The ice at the venue is produced using refrigeration systems (like giant fridges). But when these systems make ice on one side, they also produce heat on the other. To save energy, this waste heat is used to help heat the building.

After the Games, the Sliding Centre in Whistler, for example, will host international competitions and allow the local people to do more sport and increase their well-being. Being located close to hotel facilities, it will encourage more tourists to stay, boost the local economy and create jobs.

All the work done on the venues shows that sustainable development is a complex concept which often requires more effort than if no thought were given to it. But it is worth the effort, as it achieves progress, using the means available today to address a complex problem and find the most appropriate long-term solution.

End of the third zone: The pupils will have seen concrete examples of how the concept of sustainable development is applied in relation to the Olympic Games.
The First Nations are playing an important role in connection with the Games in Vancouver. The projects described here linked to the integration of the indigenous communities are part of the social component of the sustainable development which VANOC is aiming to achieve.

Zone 4 of the exhibition is entirely devoted to works created by contemporary First Nations artists from the north-west coast. It is a purely artistic section, which has nothing to do with the above-mentioned projects. Visiting this zone nonetheless enables visitors to discover aspects of the culture of the First Nations. The works displayed: masks, carved objects, paintings, serigraphies, jewels, basketwork and furnishings bear witness to a dialogue between the past and the present.

Scenography: The masks are displayed at the centre of the zone. Two showcases at the back of the room hold the carved objects and the jewellery. The two-dimensional works are displayed along the corridors around the mask area.

The works evoke legends and myths. Some objects refer to ritual ceremonies (particularly the masks). Identify the traditional repertoire the artists have based their works on.

Recurring animals: fish (salmon), frog, killer whale, eagle, crow, thunderbird and bear.

Draw attention to the realistic representations, and the more stylised or abstract one.

Select a number of works or ask the pupils to choose those which interest them most. Organise an observation exercise.

In this work, there are only three colours: red, grey and black. The shapes used are also very simple: ovoids and "U" shapes, which are typical in Canadian north-west coast indigenous art. The spatial organisation is generally codified, so that the shape surrounding the others dominates, and the elements inside it are secondary or merely decorative.

The head of the raven, in red, is recognisable (stylised eye and beak), as are its wings (in black with a grey outline). The subject matter is difficult to identify, which is normal, as the artist wished to show the complexity of the Raven's thinking. The raven is a very important animal for the indigenous peoples of the Canadian north-west coast: it has the power to create and transform. The ambiguity of its spirit is evoked here. Compare this with other more figurative works which also feature ravens. It will then be possible to identify the common shapes.

ALANO EDZERZA, THINKING LIKE A RAVEN
Serigraphy on paper.

Which shapes have you identified?
What do these shapes remind you of?
To which part of the raven do they correspond?

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ZONE 4
CHALLENGING TRADITIONS

DEMPSEY BOB, FROG’S WORLD
Alder wood carving.

What does this carving represent?
What do you think about the composition of the work?

Wood carving by Dempsey Bob. You can see a series of human figures and frogs. The fact that they are mixed up shows the interconnections between nature and people. The frog is a very popular animal on the Canadian north-west coast, and when it is shown touching other creatures, it is a sign of the exchange of knowledge and power.

KLATLE-BHI, THE SPIRIT NEEDS NO EYES
Red cedar mask, acrylic and horse hair.

How does this work make you feel?

This mask has no eyes! This is because, by following your heart, your intuitions, your dreams, the wind and the trees, and listening to what they say, you do not need eyes to see. This universal and timeless principle is shown in a mask using extremely simple shapes.

SONNY ASSU, COKE-SALISH (SERIES OF URBAN TOTEM POLES)
Duratrans, light box.

What can you read?
What does this work make you think of?
What do you think its message is?
Is there a link with the totem pole by Jim Hart?

The wording is “Enjoy Coast-Salish Territory”, not “Enjoy Coca-Cola”! It uses a light box, as the artist wanted his work to be as real as a Coca-Cola sign, which often has back-lighting. The reference to a globally-recognised brand contrasts with the much less well-known Salish territory. The use of an advertising medium is a way of lifting the Salish people out of their “invisibility”. The work decries a lack of recognition of the Salish people.

End of the fourth zone: The pupils are able to identify some of the components of the language, and certain characteristics and messages of First Nations art.
PART 3

3.1. SUGGESTIONS FOR FURTHER STUDY

3.2. SELECTIVE BIBLIOGRAPHY

3.3. PRACTICAL INFORMATION
3.1. SUGGESTIONS FOR FURTHER STUDY

THE FIRST NATIONS, KEY PLAYERS IN THE OLYMPIC GAMES

Interviews with indigenous athletes
Study any one of the First Nations in order to find out about its culture and history and then prepare an interview with an indigenous athlete from that Nation. What do the Olympic Games mean to them? What opportunities do they represent for their community? What are they doing, as an athlete, to support sustainable development? Pupils may write their questions on paper or record themselves using a video recorder, for example.

Aid: Indian and Northern Affairs Canada website, which provides links to the websites of the various Canadian First Nations.

Watch a documentary: the First Nations, torn between past and future
Sally Tisiga, member of the Kaska Nation, describes how she was taken away from her parents during the period of Canadian integration laws, along with many other people. Sent to a school far from their parents, these children were not allowed to speak their mother tongue and were cut off from their own culture. Sally’s story highlights the traumas suffered by these generations, their loss of identity and their slow rehabilitation, as well as the hope for future generations.

Aid: One of Many, documentary by Jo Béranger and Doris Buttignol.

THE VENUES: THREE EXAMPLES UNDER THE MICROSCOPE

Debate on the ecological impact of the school
Building materials, energy sources, surrounding landscape, waste production and sorting. How could the school’s ecological impact be reduced?

Aid: Photos, diagrams, plans of school buildings.

Presentations on sustainable sport
Group study of sports events organised in accordance with sustainable development criteria. Pupils briefly present their chosen example either orally or in writing, before drawing up hypotheses and developing their critical skills by finding alternatives to improve the project.

Aid: Sports sections from daily newspapers, Internet.

Image analysis
Expanses of trees, workers, Aboriginal populations, etc. Photos make it possible to start with pupils’ feelings and tackle the notion of sustainable development in a colourful and practical way.

Aid: The Future of the Earth: An Introduction to Sustainable Development for Young Readers, book by Yann Arthus-Bertrand.

LIVE OUT SUSTAINABLE DEVELOPMENT

Daily action
Ask pupils to promote sustainable development through their daily actions and to write them down each day on a board in the classroom. Choice of clothes, sorting of waste, preferred modes of transport, there are numerous examples.

3.2. SELECTIVE BIBLIOGRAPHY

FOR YOUNG READERS

CANADA

Sue McMillan, Tom Hutchinson
Find Out About Canada
This book deals with the geography, history, culture, industry and peoples of Canada.

Barbara Greenwood
The Kids Book of Canada
A double-page spread on each Canadian province and territory, showing the main cities, number of inhabitants, rivers, mountains, fauna and flora, industries, history and references to the country’s Aboriginal groups.

Vivien Bowers, Dianne Eastman
Crazy About Canada: Amazing Things Kids Want to Know
Children’s questions are the main theme of this book, which is split into three chapters: fauna, geography and culture. Many little known aspects of Canada are covered.

Diane Silvey, John Mantha
The Kids Book of Aboriginal Peoples in Canada
What was life like for the people who influenced modern Canada in many ways? Ceremonies, clothes, housing, hunting and fishing, and even the games played by Canada’s indigenous peoples are described simply and precisely. The text is accompanied by highly informative illustrations.

CANADIAN TALES

Howard Norman
Northern Tales: Stories from the Native Peoples of the Arctic and Sub-Arctic Regions
This collection of tales, classified thematically, is representative of the numerous cultures and traditions of the Inuits and American Indians.

Lydia Dabcovich
The Polar Bear Son: An Inuit Tale
Sandpiper, 1999.
A story in which an Inuit woman adopts an orphaned polar bear. A beautiful illustration of motherly love.

Donna Joe, Charlie Craigan
Salmon Boy: A Legend of the Sechelt People
A legend of the Sechelt community, located in British Columbia, on the lifecycle of the salmon. Full of lessons on respect for the environment.

SUSTAINABLE DEVELOPMENT

Yann Arthus-Bertrand
The Future of the Earth: An Introduction to Sustainable Development for Young Readers
Direct and indirect effects of human activities, problems of economic disparity: sustainable development is explained simply. The photo story guides the child through a tour of the world, helping them to understand current issues and encouraging them to take action.
Clive Gifford

**Just the Facts: Sustainable Development**  

What is the history of sustainable development? How important is it today? What solutions does it suggest? This book, aimed at teenagers, answers these questions.

FOR TEACHERS

**CANADA**

Craig Brown  
**The Illustrated History of Canada**  

This general history book retraces the rich heritage of the different Canadian provinces.

Robert M. Bone  
**The Regional Geography of Canada**  

Six geographical regions of Canada, each with their distinctive characteristics, populations and development.

Desmond Morton  
**A Short History of Canada**  

A popularised, informative and entertaining history of Canada.

Olive Patricia Dickason  
**Canada’s First Nations**  

The history of Canada does not begin with the Europeans, but with the First Nations long before. The lifestyle of these peoples has deeply influenced Canada, even though it was completely disrupted by the arrival of the Europeans. The fur trade, the gold rush and the commercialisation of the resources in the north gradually eroded the role of the indigenous peoples, who made numerous attempts to preserve their territories and cultures.

Catherine Bell, Robert K. Paterson  
**Protection of First Nations Cultural Heritage: Laws, Policy, and Reform**  

A whole mishmash of laws govern the cultural heritage of the Aboriginal peoples: some explanations.

**SUSTAINABLE DEVELOPMENT**

Simon Dresner  
**The Principles of Sustainability**  

Answers to questions such as: is it possible to live according to the principles of sustainable development? What does that mean? How can we achieve it? The book covers the origins of the concept of sustainable development, current debates, as well as solutions.

Adam Winters  
**Destruction of Earth’s Resources: The Need for Sustainable Development**  

How can we reconcile our current lifestyle and economic, environmental and social progress without jeopardising the vital resources of our endangered planet?

**Live Well, Live Wisely!: Technology for Sustainable Development: Design and Technology, Key Stage 3**  

This book suggests ways for teachers to tackle sustainable development in subjects such as design, technology and geography. Case studies, tools, ideas for pupils and suggested activities are provided.

Gerard De Haan, Julia Mann, Anna Marie Reid  
**Educating for sustainability**  
Frankfurt am Main [etc.]: P. Lang, cop. 2000.

47 European projects on education for sustainable development are presented in this book, which is packed with ideas and examples.
SPORT, OLYMPIC MOVEMENT AND SUSTAINABLE DEVELOPMENT

Olympic Movement’s Agenda 21: Sport for sustainable development
This theoretical work, inspired by UNCTAD’s Agenda 21, was adapted for the Olympic Movement in order to guide its approach to sustainable development.

Manual on Sport and the Environment
Biodiversity, ecosystems, town and country planning, pollution, management of resources and waste, health and safety, cultural heritage: how to behave on a day-to-day basis and when practising sport in order to protect our heritage both individually and collectively.

IOC Guide on Sport, Environment and Sustainable Development
This practical guide suggests ways in which the sports community can act in accordance with the concept of sustainable development.

INTERNET SITES

OLYMPIC GAMES

Official site of the Vancouver 2010 Olympic Games:
http://www.vancouver2010.com
Official IOC site:
http://www.olympic.org

CANADA

Indian and Northern Affairs Canada site
http://www.ainc-inac.gc.ca
Canadian encyclopedia
http://www.thecanadianencyclopedia.com
Environment Canada
http://www.ec.gc.ca

SUSTAINABLE DEVELOPMENT

Sustainable development news
http://www.sustainable-development.com
Site of the Swiss Confederation: concept of sustainable development and applications
http://www.are.admin.ch/themen/nachhaltig/index.html?lang=en
Climate protection
http://www.myclimate.org/en

OLYMPISM AND OLYMPIC GAMES

Information Kit Students - Teachers
Set of fact sheets on the Olympic Games in Ancient Greece, the modern Olympic Games, the Olympic symbols, the Olympic flame and torch relay, the Olympic Movement and the Olympic Games posters. It can be downloaded free of charge from: http://www.olympic.org/education.
3.3. PRACTICAL INFORMATION

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OPTIONS FOR VISITING THE VANCOUVER 2010 EXHIBITION FROM 8 OCTOBER 2009 TO 11 APRIL 2010

A. Guided tour and workshop
“Sustainable Games, Olympic challenges!”
A guided tour and workshop are available to school groups (pupils aged from 6 to 16). The workshop looks at examples of traditional games and their commercial alter egos, and pupils consider the different dimensions of sustainable development. They then try out some of the processes implemented for Vancouver 2010. A workshop combining the Olympic Games and science, explaining how infested wood can be usefully recycled and how making ice generates heat!

There are two versions of this workshop: one for 6 to 11s and the other for 12 to 16s. The latter also tackles the social dimension of sustainable development.

B. Visit without a guide
School visits must be booked in advance. Please let us know you are coming two weeks in advance by telephoning +41 (0)21 621 67 27 or emailing edu.museum@olympic.org.

Opening hours
The Museum is open every day from 9 a.m. to 6 p.m.
Closed on Mondays between 1 November and 31 March.

Prices
Schools (compulsory schooling) CHF 6.-/pupil
Accompanying adult/10 pupils free
Guided tour for school groups (with workshop) CHF 50.-
Children aged between 6 and 16 and students (individual) CHF 10.-
Adults (individual) CHF 15.-

GETTING TO THE MUSEUM

By metro
M2 (direction Ouchy): stop at Ouchy or Délices.

By bus
Buses 8 and 25: stop at Olympic Museum.
Bus 4: stop at Montchoisi.

By car
Motorway exit Lausanne-Sud. At the roundabout, follow the road along the lake as far as Ouchy, then follow the signs to The Olympic Museum.

Parking
Parking spaces on Quai d’Ouchy or in the Port d’Ouchy car park (entrance in front of the Mövenpick Radisson Hotel).

Reduced mobility access
North entrance of The Museum.
We are grateful to the VANOC educational programmes for their careful proofreading and to the VANOC sustainability department for its valuable information.

This document is also available in French and German.

It can be downloaded from http://www.olympic.org/education