

Infrastructure and accessibility

Working out what resources and facilities will be needed is a crucial part of planning a successful event. You also need to make sure that your event is accessible to disabled people (including those with visual or hearing impairments), to the elderly and to families with children. Providing accessible services and facilities will ensure that your event can be enjoyed by as wide a range of people as possible.

You don't have to cover all the topics discussed in this factsheet in your Challenge entry. Be selective, and choose activities which interest you.

Transport links

It's important for athletes, spectators and officials to be able to get to your venue easily. With thousands of spectators coming to watch your event, good public transport links are essential. Athletes and spectators might travel from anywhere in the UK, or from overseas. You also need to make sure that spectators from your area can get to your venue easily using local public transport.

Not all railway stations in the UK provide step-free access to platforms, so check that the public transport to your event is accessible.



Encouraging use of public transport

At London 2012, rowing and canoe sprint spectators will get free rail travel from London to Slough. Accessible shuttle buses will take them to the venue at Eton Dorney.

London 2012 has a target of 100% of spectators travelling by public transport, walking or cycling.

Accessible parking

Three-quarters of car journeys in the UK are 5-miles or under. Walking, cycling and public transport are all more sustainable ways of travelling short distances than driving.

However, cars are the only means of transport for many people with mobility impairments. And cars may be the most practical way of getting to a venue in a remote location.

You may choose to provide parking for Blue Badge holders at your venue. The Blue Badge scheme allows people with severe mobility problems to park close to where they need to go. The scheme operates throughout the UK.

Blue Badge parking spaces

- Parking bays should be located within 50 m of buildings. If this is not possible, resting areas should be created every 50 m.
- Blue Badge car parking areas should include bus or coach drop-off and pick-up areas.
- Parking bays should have dimensions of at least 2.4 m × 4.8 m.
- Bays should have a 1.2 m access zone at each side and at the rear.
- There should be level access or a dropped kerb which avoids the need to travel between or behind other parked cars.

Power, utilities and communication

Running a major sports event requires lots of electricity. Broadcasters will want to power cameras and transmitting equipment, and critical timing and recording systems will need a reliable source of electrical power. Back-up generators will mean that millions of TV viewers won't miss seeing a world record if there's a power cut.

How much will it cost to heat or cool your venue, and what sources of energy will you use? Existing venues will already have power and utilities, but if you are constructing a new venue you might want to plan how you will provide these and how much they will cost.

Broadcasters and officials will need high-speed internet access at your venue. You could also choose to provide wireless internet access for the thousands of spectators who will come to watch your event, allowing them to check up on the latest scores and download videos on their smartphones and tablets.

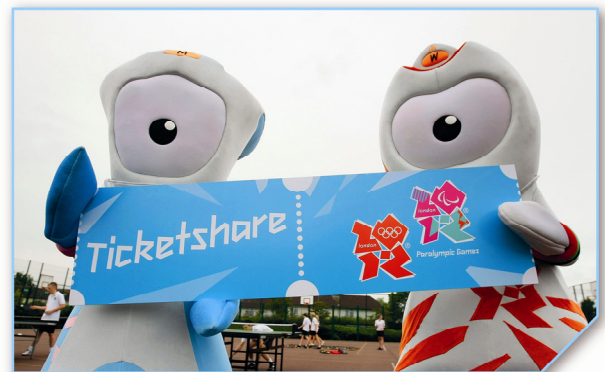
Ticket pricing

Accessibility is about more than just physical access. Tickets are an important source of revenue for any sporting event. But you need to make sure that they are distributed fairly, so that people from a broad range of backgrounds can come to your event. And ensuring that your tickets are affordable will guarantee that your venue is packed to the rafters on competition day.

Accessible tickets

Affordable ticket schemes can help make your event accessible. London 2012 organisers made 1.3 million tickets available under a 'Pay Your Age' scheme. As well as benefiting spectators aged 16 and under, this scheme allowed anyone aged over 60 to pay just £16 for a ticket.

And by charging a little bit more for corporate hospitality, London 2012 organisers were able to donate 100 000 tickets to school students across London and the UK, as part of the 'Ticketshare' scheme.



Website accessibility

If you design a website for your event, the law requires you to make sure that it is accessible to blind, partially sighted or disabled users.

Accessible website design includes providing text descriptions of images or video, making sure users have time to read information, avoiding flashing lights and making text readable at different sizes. You might also want to make your website accessible for users who don't read or speak English as a first language.

Buildings and facilities

You need to make sure that your venue can meet the physical needs of your event. If the current capacity of the venue is too small, how can you incorporate additional seating? Spectators also need facilities, such as toilets, wheelchair-accessible seating areas and food and merchandise concessions.

The athletes at your event will need changing and warm-up areas. Some sports have specific requirements for these, so make sure you check what is needed for your event.



Adapting an existing venue

Lord's Cricket Ground has a capacity of 28 000, but the layout isn't ideal for archery. During the 2012 Games, temporary stands will be constructed so that the 6500 spectators have the best possible view of the action.

Inclusive design

There are many things to consider when planning accessible buildings and facilities. Here are just a few:

- Changes in level can cause difficulty for people with mobility impairments. Aim for shallow gradients (approximately 1:60) with horizontal rest areas every 50 m.
- Signs should not rely exclusively on text and should allow people to identify the best routes to facilities.
- Approximately 10% of all toilet cubicles should be accessible for someone who has a mobility impairment. Toilets for wheelchair users should be available in both left- and right-handed configurations.
- Multi-faith prayer facilities should be provided, with the direction of prayer indicated in the room.

Groups of people with specific accessibility requirements

- People with hearing, visual or mobility impairments.
- People with cognitive impairments.
- People with reading difficulties like dyslexia.
- People who do not speak or read English as a first language.
- People from different cultural and socio-economic backgrounds.
- People with young families and the elderly.



Cut and fill

Cut and fill is a way of levelling areas of ground. Soil from raised areas is moved into lower-lying areas.

Engineering company Buro Happold used a digital model of the Olympic Park to work out where to cut and where to fill, ensuring that almost all the slopes within the Park have a gradient of 1:60 or less. The steepest slope in the Park has a gradient of 1:21.

Activity ideas

Here are a few ideas of how you could use your maths and science skills to explore the infrastructure and accessibility needs of your event.

- Design a leaflet or website page telling spectators what transport links to use to get to your venue.
- Plan journeys to your venue using public transport. Work out how long it would take an athlete to travel from the Olympic Park, or a spectator to travel from a nearby town. Work out which sections of the journey might be problematic for a wheelchair user.
- Design the track, course or court layout for your venue. Make sure it meets the needs of your chosen sport.
- Mark different buildings and facilities on a map or plan of your venue or its surrounding area. Mark entrances and exits and work out which will be used by athletes, spectators and officials.
- Calculate the energy costs for running your event.
- Work out where to place wireless access points so that spectators can access the internet.
- Estimate the amount of bandwidth needed for spectators, athletes and officials to get online at your venue.
- Calculate the number of accessible toilets and other facilities you will need for your event.
- Plan a car park for your venue, making sure there is sufficient provision for Blue Badge holders.
- Design a system of signage for your event, with colour, icons, simple symbols and careful language.

Using your time effectively

You don't need to complete all of these activities. Be selective, and choose activities which interest you, and which will give you opportunities to work as a team and demonstrate your maths and science skills.

Remember, these activities are only suggestions. You can carry out whatever work you wish to support your choices.

FACTSHEET 2

Find out more

Visit these websites to find more information and resources to help you plan for the infrastructure and accessibility of your event.

www.london2012.com/visiting/accessibility The official London 2012 website has loads of information on accessibility.

www.google.com/earth Use Google Earth™ to find maps and satellite photos of your venue/location. This free software contains tools to find lengths, distances and elevations on the ground.

www.london2012.com/documents/oda-publications/inclusive-design-standards.pdf The inclusive design guidelines used by the designers of the London 2012 venues.

<http://sketchup.google.com> The free version of Google Sketchup™ can be used to create 3D models of new venues or facilities. You can download features such as grandstands from the internet to use in your model.

www.nationalrail.co.uk Find train times and ticket prices for the UK rail network.

www.ukti.gov.uk/download/114068_102492/UKTISportsArchitectureandEngineeringbrochure.html Examples of sports venue designs by UK architecture and engineering companies.

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