

Bowled Over



A Teaching Resource Pack
For Key Stage 2

hollywood bowl
www.hollywoodbowl.co.uk

A fantastic, free, cross-curricular resource from the hollywood bowl education programme.

Find out about marketing and corporate image, look at the effects that a physical activity, such as bowling, has on the body. Examine the different jobs that there are and prepare to be 'Bowled Over' when you discover how we have fun with maths here at hollywood bowl!

A fully curriculum linked resource pack for teachers of Key Stage 2 Mathematics, English, Science, PSHE, Art and Design and Citizenship.

Further copies of this pack can be ordered at www.hollywoodbowl.co.uk



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Poster – Advertising and Corporate Image

Poster – The Biology of Bowling



Winner of Learning with hollywood bowl
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Versions of this pack are available with links to the following:

The National Curriculum for England

The Curriculum Guidelines for Scotland

The Curriculum for Excellence for Scotland (available from August 2009)

The National Curriculum for Wales – Published in English and Welsh

Introduction

A good piece of marketing literature is concise, well-worded, eye catching and has all the relevant information the reader wishes to know but without going into too much detail!

Explain to the pupils that marketing and advertising can take many forms, from posters and flyers to TV and radio broadcasts. Can they tell you why companies would want to advertise?

The main reasons are to alert you to their existence, inform you about their products and guide you to their location or a place where more information can be found (this could be a telephone number, e-mail address or web address). From this we gain three keywords: Alert, Inform and Guide which you can use later in the design activity.



Discussion

Ask your pupils if they can think of any advertising that they have seen or heard recently, who was it for, where did they hear/see it, what did it say and why can they remember it? This activity will help them to understand what makes a memorable and hence good advert. You could ask the pupils to bring in some advertising that they have found (e.g. flyers, magazine inserts, newspaper adverts etc.), then you can compare the size of the font, layout, pictures, etc. Ask your pupils how each piece of advertising gets the key message across (this could be a sale, or an opening offer etc.)

Have a look at the 'Advertising, Marketing and Corporate Image' poster and ask the pupils what stands out about the uniform ideas, how do they know where Holly and Woody work? Does a logo help with advertising? Explain that when a company uses the same colours, logos and/or font style on all their marketing, advertising, uniforms etc. it provides them with a corporate image, an image that we as customers find easy to identify. We know who it belongs to, what they do and what we can expect from them.



Activity 1 - Corporate Image Design Ideas

Ask your pupils to design elements of a new corporate image for Hollywood Bowl, a new logo, new theme colours, new uniforms, perhaps a tag line (Hollywood Bowl have used tag lines in the past: 'The Difference is Striking' and 'Guaranteed Good Times'). They need to draw their ideas and also write a short piece explaining how they came to their final design and why they chose those colours, logo design etc. You could use a graphics or DTP package and link this in with ICT.

Activity 2 - Advertising Design Ideas

Using their new designs for Hollywood Bowl ask your pupils to come up with a piece of advertising for Hollywood Bowl. The pupils could produce leaflets, posters, flyers, or write the script for a radio or television advert (they could even record the advert if you have the facilities). They should include their ideas from Activity 1 in their adverts. The pupils will also need to think about the keywords we introduced earlier. **Alert:** they need to make sure that the advertising tells readers/listeners about Hollywood Bowl. **Inform:** they need to make sure that they inform the readers about what Hollywood Bowl is and what you can do there, and finally they need to **Guide** the readers/listeners to the location of Hollywood Bowl or to somewhere that they can find out more information.



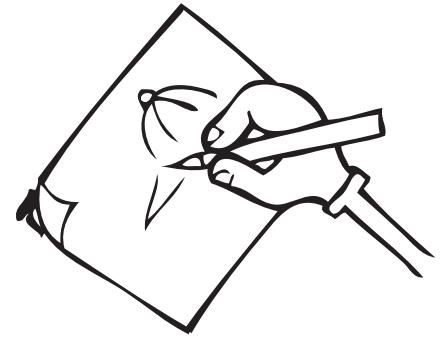
National Curriculum Links - Key Stage 2

English: En2 3a,b,c. EN3 1a,e, 2a,b,c,d,e,f.
Art & Design: 1b,c, 3a.
Design & Technology: 1b.
ICT: 1a,b,c, 3b, 4b.

Currently Hollywood Bowl use the following in their advertising:

- A logo
- Corporate colours
- Fonts

The above helps to make up their corporate image; it makes them easily recognisable to us.



Can you come up with a new image?

Draw your ideas below (you could draw some rough ideas out on some scrap paper first):

New logo

New colours

New fonts

New tag line

Introduction

Exercise is very good for us. Any activity that raises our heart rate and gets us moving is good for us.

Explain to the pupils that exercise can take many forms, from vigorous sport to more gentle exercise like walking.

Discussion

Ask your pupils what type of exercise they do. Perhaps some walk or cycle to school, others may have swimming lessons or are members of clubs like football, karate or netball. How often do they exercise? What exercise do they do at school? Perhaps you do sport, music and movement or P.E? Have any of your pupils been bowling? Do they think that bowling is a form of exercise?

Activity 1 - Heart Rate

(You will need a stop watch for this activity).

The aim of most exercise is to increase your heart rate. Your heart rate is the number of times your heart beats in one minute; we measure it in bpm (beats per minute). In this activity we are going to look at how much our heart rate increases during simple exercise. Pupils can have a go at taking each other's pulse (this can be tricky and some pupils may not be able to do this). Pupils need to count how many times they feel their partner's heart beat in one minute and record these resting pulse rates in the table on the worksheet. They need to undertake each activity listed in the table on the worksheet recording their pulse immediately after completing each activity. Pupils that find taking a pulse tricky could compare their own resting heart rate, to their heart rate after exercise. They can do this by putting their hand on their own chest, and seeing if it beats **faster** or **slower** during the various activities and recording this on their sheet.

Activity 2 - Muscles

(It would help if pupils were in their sports kit for this activity - you will need to be sensitive to cultural/faith issues when planning this).

Our bodies are made up of many different parts, most of which we can't see as they are inside us. The parts that help us exercise by supporting us and helping us move are the skeleton and muscles. We are going to look at the main muscles in our arms and legs that help us to move.

Have a look at the 'Biology of Bowling' poster. Can the pupils feel any of these muscles on themselves?

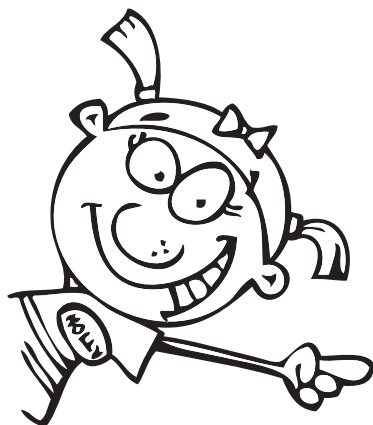
Split the pupils into small groups (3 or 4). One person in each group is going to be the model. Give the remaining pupils in each group a sheet of stickers and a pen. The pupils then have to write the names of the main muscles on each sticker and stick them where the muscles are on their model. It might help the model to move around slightly to help identify where the muscles are.

Which of these muscles do they think you would use when you are bowling? Have a look at the poster and ask them to get into the bowling poses, can they feel which muscles are working?



National Curriculum Links - Key Stage 2

Science: SC1 2. SC2 2c,d,e.
Physical Education: 4a,c.



How to take a pulse.



Activity 1 Table

| Activity | Resting | Hopping for 1 minute | Skipping for 1 minute | Running for 1 minute | Lying down for 1 minute |
|------------|---------|----------------------|-----------------------|----------------------|-------------------------|
| Pulse rate | | | | | |

Which activity made your heart beat the fastest?

Which made your heart beat the slowest?.....

Were you breathing faster when your heart was beating faster?

Introduction

What makes a ball roll and why does it stop? What forces act on a bowling ball when it is rolled down a lane? We will use simple activities to try and work out the answers to these questions.

Discussion

Remind your pupils about gravity and that objects are pulled downwards because of the gravitational attraction between them and the earth. This can be demonstrated by dropping a marble. Discuss what may cause falling objects to slow down or fall more slowly than others. This can be demonstrated by dropping a marble and a feather. Explain to the pupils that as the feather is flatter than the marble it will fall more slowly, because as it falls the air pushes against it and has to push against a large flat area (the underside of the feather). The marble, however, is spherical and so the air can easily flow around it as it falls. When air slows an object down we call it 'air resistance' and this is a force. Gravity is also called a force as it acts on an object.

A good demonstration is to drop two playing cards, one side on and one edge on, to demonstrate that items with a larger surface area at the bottom will have more resistance than an item with a smaller surface area at the bottom. Explain how forces can make objects move but also how they can prevent something from moving.

All forces have an opposite force. If a table weighs 30 kg and is standing on the floor then the floor must push upwards with a thrust of 30 kg. If the floor has woodworm and is unable to deliver a thrust of 30 kg then the table will fall through the floor. If, however, by some bizarre event, the floor produced a thrust of 31kg then we would all be surprised; the table would become airborne!

Activity 1- Arm Wrestling

Ask the pupils to split into pairs. Each pair is going to have an arm wrestling competition. Once each pair has finished, sit all the winners together (group 1), all those that didn't win together (group 2) and all those that drew together (group 3). Ask groups one and two which group contains the people who have the greater force? Which group contains the people who have the lesser force? Explain that in this case the 'object' was their opponents hand and that the winners had the greater force as they were able to 'push' their object. This demonstrates that for each force there is an opposite force. Ask your pupils what would happen if the forces were equal? Which group demonstrated this? Did group 3 recognise that their forces were equal? You can reinforce this activity with a game of Tug-O-War. Which side had the greatest force?

Activity 2 - Marble Rolling

(For this you'll need a wedge/doorstop, tape measure and marbles)

We are going to look at how different surfaces can slow an object down. Use the wedge to launch your marble (place the marble at the top and just let it roll down) this keeps the initial force placed on the marble at the start consistent. Show your pupils how to launch their marble consistently. Choose some different surfaces to roll the marble on, you could try carpet, concrete, grass, wooden floor, fabric, whatever is available. Once the marble has stopped, record how far it has travelled by measuring the distance from the base of the wedge to the marble. Use the table on the worksheet. Remember that if the pupils work in groups and you are going to compare results, they all need to have identical wedges as the height of the wedge will affect the speed the marble starts off at and how far it rolls.



National Curriculum Links - Key Stage 2

Science: SC4 2b,c,d.

How to roll your marble.

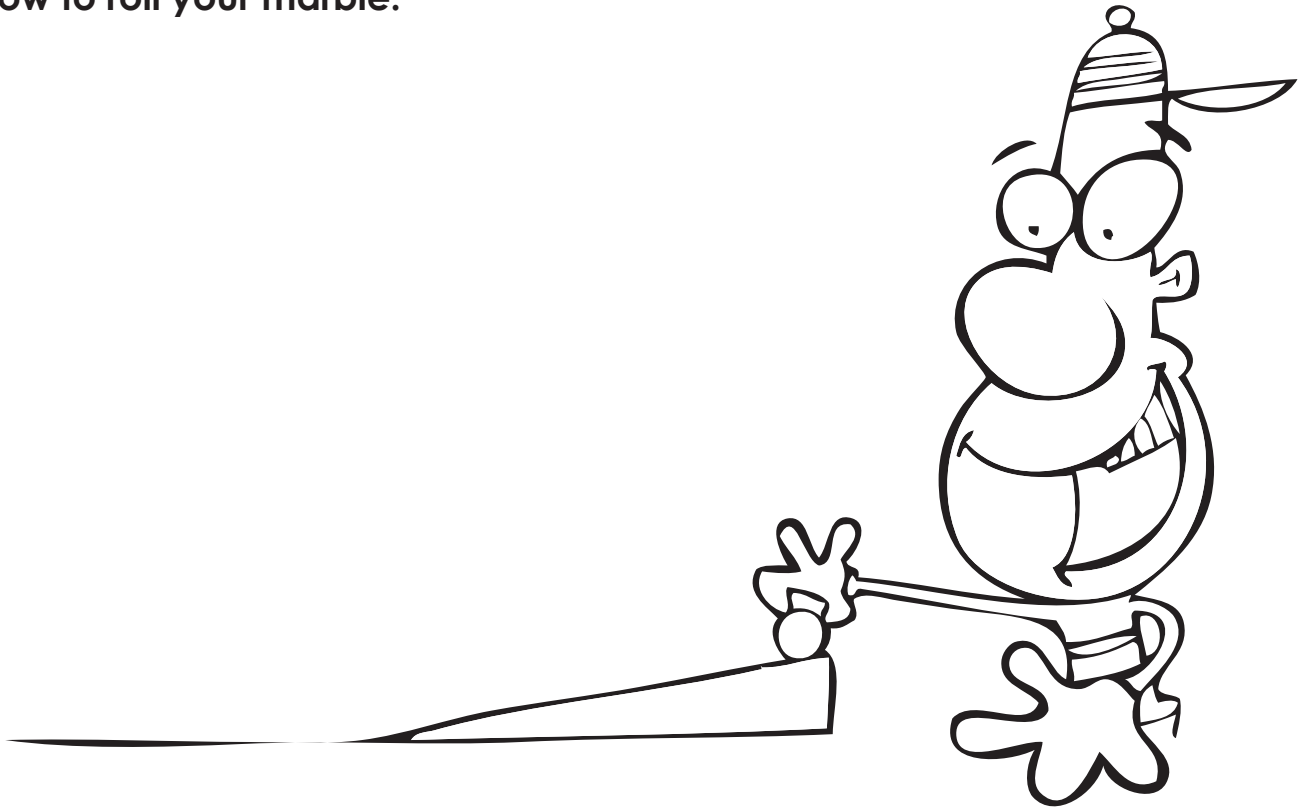


Table:

| | | | | | | | |
|----------|---------------|--|--|--|--|--|--|
| Surface | <i>carpet</i> | | | | | | |
| Distance | <i>0.75m</i> | | | | | | |

On which surface did the marble travel the furthest?.....

On which surface did it travel the shortest distance?.....

When an object is moving and a force slows it down we call this force 'Friction'. Rough surfaces tend to have more friction than smooth surfaces, did you find this?.....

Why do you think that Hollywood Bowl use polished, flat surfaces for their lanes?.....
.....

Introduction

There are many different jobs at Hollywood Bowl and each person is an important member of a team. This team helps make sure that you have a safe, fun, clean and enjoyable experience when you come bowling.

Discussion

Talk to the pupils about the jobs that people they know do. Find out what jobs their parents/carers/relatives do. Ask them then to think about their school, how many different jobs do people in their school do, how many can they identify? (E.g. Head Teacher, Teacher, Secretary, Cook, Lunch Time Supervisor, Learning Support Assistants, Caretaker etc).

Activity 1 - Looking at Job Descriptions

On the worksheet there is an abbreviated role profile for the 'Front of House Team Member' for Hollywood Bowl; discuss this with your pupils. This team member is one of the first faces visitors to Hollywood Bowl will see. Who is the equivalent to 'front of house' at your school? Who is the person that visitors will see first? If you can access a copy of your school's 'front of house' job description, ask pupils to compare the two. Which sections are similar and which are different?

Activity 2 - Looking at Working in the Café & the Handbook

All Hollywood Bowls have a café serving snacks, meals and hot and cold drinks. They also cater for parties. Working in the café is a very important role. Can pupils write down what they think the role profile for someone who works in the café should include? They will need to think about food hygiene, food safety, equipment use and knowledge, storing food, cooking, cleaning, taking orders and the appearance of that team member.

The handbook at Hollywood Bowl is a very important tool to help members of staff learn about what they have to do. It explains the rules and what Hollywood Bowl expects from its staff. On the bottom of the worksheet it asks the pupils to design a handbook aimed at a new pupil starting at their school. What information should go in it? If you have a school prospectus some of the information may be in there such as uniform, school start and home times etc.



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National Curriculum Links - Key Stage 2

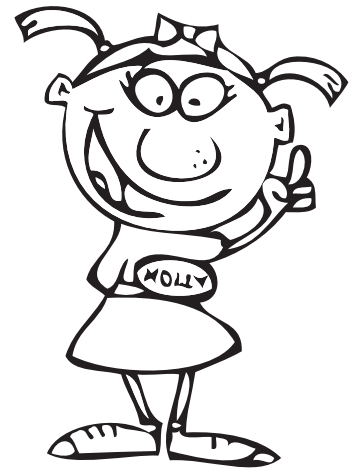
English: En2 3c. En3 1a,e, 2a,b,c,d,e,f.
Citizenship: 1e.
PSHE: 1e.

Role profile for Front of House at Hollywood Bowl:

Overall purpose: To develop excellent customer relations when serving the customer, whilst displaying the characteristics of the brand. Adherence to all Health and Safety, Food Hygiene and company policy.

Responsible to: General Manager.

Responsible for: Carrying out all tasks outlined below and any other tasks and duties which may be required of you by your line manger.



| What I do | What a good job looks like | How do I learn it? |
|--------------------|--|---------------------------------------|
| Customer Service | Great service to all customers | Handbook Team meetings |
| Communication | Friendly and polite behaviours towards customers and team members at all times | Handbook |
| Open / Run / Close | Centre is tidy and maintained, providing a welcoming environment | Opening and Closing lists Handbook |
| Training | Fulfil basic requirements and complete further training as required | Handbook Workbook |

The handbook is a really important book telling the team member all the pieces of information that they need to know. The handbook tells them how to do their job well and what is expected of them.

If you had a new pupil starting in your class, how would they know what to do during the day and how would they learn the school rules, or know what to wear?

Could you design a school handbook to help a new pupil? What information could you put in it?

Introduction

Bowling is a fun pastime that many of us have participated in at one time or another, but how many of us have realised that angles play an important part in the game?

Discussion

Talk to your pupils about bowling. Have any of them ever been bowling? Those that have never been to a bowling centre may well have played before... how? On their Wii! (If you can arrange to borrow a Wii console, you could have a go at bowling in class! Ideal for a bit of practice before a visit to Hollywood Bowl!)

Explain that the aim of bowling is to knock down as many pins as possible. To do this the person bowling varies the angle that the ball rolls at, so that the ball hits the pins that they want to hit and knocks them down.

Activity 1 - Bowling on Paper

(For this you'll need some dice and **card** copies of Understanding Angles - Pupil Worksheet 5, scissors, pencils & rulers.)

Ask pupils to cut out their bowling ball, taking care not to damage the protractor or the bowling alley (it may be easiest for the pupils to cut the corner off their worksheet before cutting out the ball).

Meanwhile copy the table below onto the board.

| Number Rolled on Die | Angle |
|----------------------|-------|
| 1 | 0° |
| 2 | -5° |
| 3 | +5° |
| 4 | -10° |
| 5 | +10° |
| 6 | -20° |

Pupils then roll the die to randomly obtain a number from 1 - 6. They then need to look up the corresponding angle for them to 'bowl' at from the table. Next pupils find the angle from the centre line (e.g. the centre line is at 90°, so if they throw -10° then they need to work out that $90^\circ - 10^\circ = 80^\circ$). They will then need to find 80° on the protractor on the worksheet, and draw a straight line, using a ruler, at 80° towards the pins. Now they will need to line up the dotted line on the ball with the line that they have drawn and slide it towards the pins. Which pins will it hit? There are two goes at bowling the ball in a frame, how many will they knock down in a single frame? Obviously the pins on paper won't roll or knock any other pins down.

Why not give the pins numbers? For a simple extension activity, pupils can add up the numbers on the pins that they knock down, and work out their score.

Discussion

Discuss with pupils why they are more likely to knock down more pins in real life and, therefore, stand a better chance of getting a strike (when you knock all the pins down with one ball) or a spare (when you knock all the pins down with two balls). This depends on how hard and fast you bowl the ball and whether the pins roll as they fall and knock over other pins.



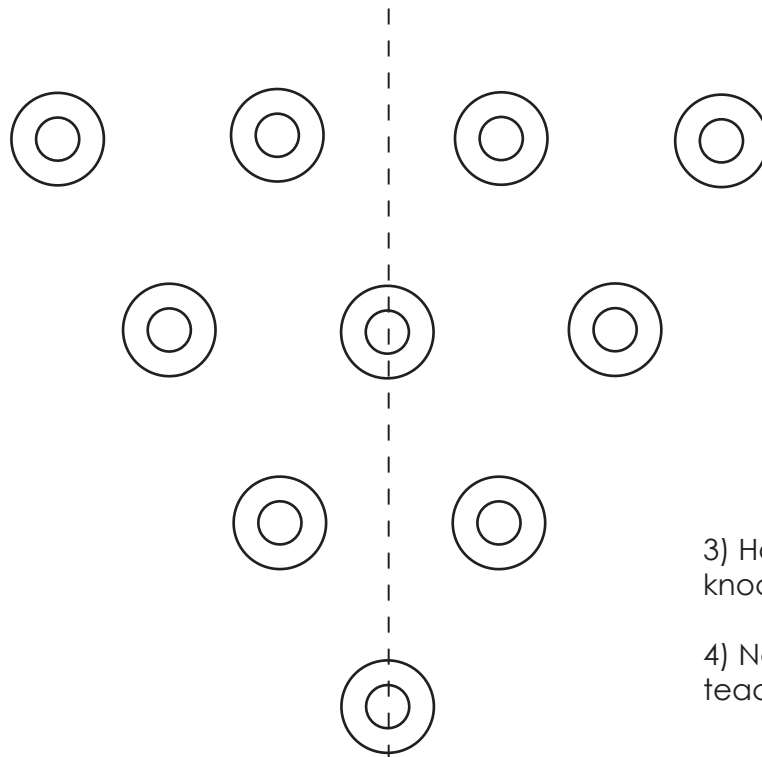
National Curriculum Links - Key Stage 2

Mathematics: Ma3 2a, 3a, 4c.

Bowling on Paper

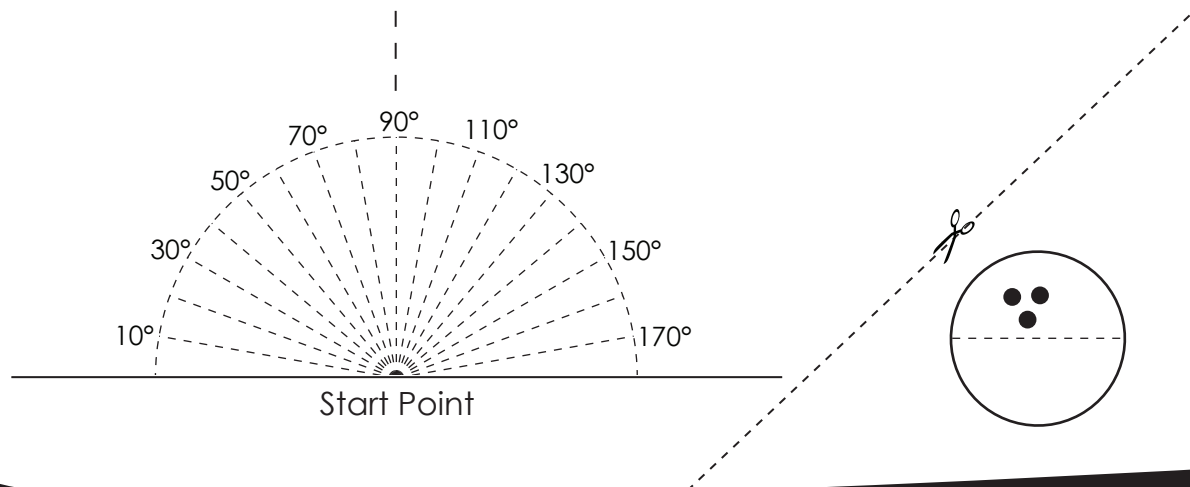
1) Cut out your bowling ball from the bottom of this sheet and line up the dotted line on it with the centre line.

2) Now slide your bowling ball along the centre line towards the pins.



3) How many pins would it knock down?

4) Now try the activity your teacher has set you.



Introduction

Data Analysis can be a useful tool for many businesses, giving them valuable information about their customers and enabling products and services to be tailored in the best way to suit demand.

Discussion

Introduce the concept of data analysis and its uses, by talking to your pupils about the details that businesses can get by collecting information about their customers, for example; what people buy, how old they are, what time they like to visit etc. This allows businesses to see if they are attracting the types of customers they want to see, and also enables them to work out if they need to advertise to bring in different customers.

Activity 1 - Data Analysis

On the worksheet you can see an example of some fictitious customer information that could perhaps have been taken from a Hollywood Bowl. Pupils will need to extract the following information from the data on the Data Analysis Worksheet. You may find it helpful to put the following questions on the board. Pupils may need a calculator for some of these questions.

- Q1) Were there more males in the morning or afternoon/evening? A) *There were more males in the morning.*
- Q2) Were there more children in the morning or afternoon/evening? A) *There were more children in the morning.*
- Q3) What is the average age of customers on that particular Wednesday morning? A) *The average age of customers in the morning was 15.*
- Q4) What is the average age of customers on that particular Wednesday afternoon/evening? A) *The average age of customers in the afternoon/ evening was 26.*
- Q5) What is the average spend per person, on food in the morning? A) *The average spend per person, on food, in the morning was £1.26 (if you include the school trip).*
- Q6) What is the price range typically spent on drink in the afternoon/evening? A) *The range of money spent on drink in the afternoon/evening was £2.00 - £12.00, a range of £10.00.*
- Q7) What was the average spend, on food, per head in the morning? A) *The average spend per head in the morning was £6.00.*
- Q8) What was the average spend per head in the afternoon/evening? A) *The average spend per head in the afternoon/evening was £18.13.*
- Q9) Did people spend more in the morning or the afternoon/evening? A) *People spend more in the afternoon/evening.*

You may also like to explain that for data such as this to be more useful, it would need to be looked at in larger quantities. For example if you wanted to find out more about peoples' spending habits on Wednesday mornings it would be much more helpful to look at figures for a large number of Wednesdays, as this would give a truer overall picture.

Extension Activities

- 1) On a separate piece of paper, plot a graph or chart showing how much money each visitor spends on food.
- 2) Now plot one showing the ages of visitors in the afternoon/evening.

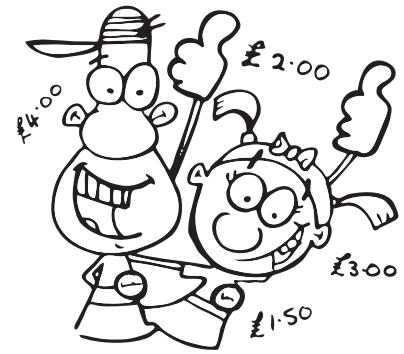
Don't forget to give your charts/graphs titles and label the axis.



National Curriculum Links - Key Stage 2

Mathematics: Ma2 1a,b,c,d,e, 4a,b,c. Ma4 1a,c,e, 2a,c,e.

Wednesday



| AM / PM | Gender | Age | No. of Games | Spend on Food | Spend on Games Area | Spend on Drink |
|---------|--------|-----|--------------|---------------|---------------------|----------------|
| AM | F | 31 | 3 | £8.00 | £4.00 | £3.00 |
| AM | F | 28 | 3 | £6.00 | £2.00 | £2.00 |
| AM | M | 6 | 3 | £5.00 | £1.00 | £2.00 |
| AM | F | 4 | 3 | £5.00 | £1.00 | £2.00 |
| AM | M | 7 | 1 | | | £1.50 |
| AM | M | 7 | 1 | | | £1.50 |
| AM | M | 7 | 1 | | | £1.50 |
| AM | F | 6 | 1 | | | £1.50 |
| AM | F | 7 | 1 | | | £1.50 |
| AM | F | 7 | 1 | | | £1.50 |
| AM | F | 7 | 1 | | | £1.50 |
| AM | F | 6 | 1 | | | £1.50 |
| AM | F | 6 | 1 | | | £1.50 |
| AM | M | 7 | 1 | | | £1.50 |
| AM | M | 7 | 1 | | | £1.50 |
| AM | M | 6 | 1 | | | £1.50 |
| AM | F | 40 | 1 | | | £1.50 |
| AM | M | 54 | 1 | | | £1.50 |
| AM | F | 42 | 1 | | | £1.50 |
| PM | M | 16 | 5 | £10.00 | £5.00 | £8.00 |
| PM | M | 17 | 5 | £11.00 | £7.00 | £5.00 |
| PM | M | 16 | 5 | £8.00 | £5.00 | £7.00 |
| PM | F | 21 | 5 | £12.00 | £2.00 | £12.00 |
| PM | F | 20 | 5 | £7.00 | £1.00 | £10.00 |
| PM | F | 21 | 5 | £10.00 | £1.00 | £10.00 |
| PM | M | 49 | 2 | £5.00 | | £2.00 |
| PM | F | 48 | 2 | £5.00 | | £2.00 |



School Trip

Introduction

The last two sheets in this pack are to use on a visit to your local Hollywood Bowl.

Making learning fun! What could be more fun than a game of bowling? To find your local Hollywood Bowl in order to organise a school trip please visit www.hollywoodbowl.co.uk. Then contact your local Hollywood Bowl team who will be pleased to provide you with further details and help you organise a free preliminary visit and provide help and advice when completing your risk assessments.

Numeracy

Numbers are very important for Hollywood Bowl, we use numbers in many different parts of the centre and for different reasons.

Activity 1- Number Spotting

(For this you'll need pens, paper and clip-boards)

During your trip to your local Hollywood Bowl ask your pupils to look around the centre (under adult supervision) and write down where they see numbers and what purpose they serve. For example; numbers on shoes – shoe sizes, numbers on menus – prices, numbers on the computer screen above the lanes – scores etc.

Activity 2 - Numeracy Quiz

(For this you'll need pens, copies of the Worksheet 7 - Numeracy Quiz and clip-boards)

Ask your pupils to carefully answer the questions on the worksheet; they will need to look around Hollywood Bowl. Remind them to show their working out and to write down the units with their answers. The answers to the questions on the worksheet and/or the figures needed to help you work out the answers can be found by looking carefully around your local Hollywood Bowl. Don't forget that the answers to some of the questions may have changed since your last visit.



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National Curriculum Links - Key Stage 2

Mathematics: Ma2 1a,b,c,d,e, 4a,b,c. Ma4 1a,c,e. 2a,c,e.

Numeracy Quiz

Take a walk around your local Hollywood Bowl, if you look carefully you will find the answers to the questions below and/or the figures that you need to help you work out the answers.



1) How many pins would you need to knock down to get a strike?

A)

2) How much would you have to pay for a game at 2pm on a Saturday?

A)

3) How much would it cost you to have two games on the Air Hockey Table?

A)

4) How much would your bill come to if you bought a cup of tea, a hot chocolate and two mineral waters?

A)

5) Following on from question 4, how much change would you get if you paid your bill with a £10.00 note?

A)

6) How many lanes are there?

A)

7) At the end of each lane is a machine that collects and re-issues the pins after each frame. Each machine holds 20 pins. How many pins are there in total, in all of the machines?

A)

8) How much would it cost for you to have your next birthday party at Hollywood Bowl, if you invited 10 friends?

A)

9) If you had one go on everything in the games area, how much money would you spend?

A)

10) If Holly and Woody came to bowl with their Mum on a Thursday after school, how much would two games cost?

A)

Introduction

This work builds on the work already carried out by pupils when completing Worksheet 4 – Employment.

Jobs and Meeting People

There are many different jobs at Hollywood Bowl, some are more obvious and are 'front of house', whereas others are 'behind the scenes'. Nevertheless, they all make up the team that is vital in making Hollywood Bowl a fun, safe, exciting, efficient and clean place to visit.

Activity

During your visit to your local Hollywood Bowl, ask your pupils to find out how many people work there and find out how many different jobs there are. The staff will be able to tell the pupils about each role, what that person does and what qualifications, skills and/or experience they need to do the job.

On Worksheet 8 – Jobs and Meeting People there is a table which can be used by the pupils to log the information they find out. You may not want to cover every job at Hollywood Bowl in detail, so why not select a few to look at more closely?

Extension Activities

- 1) Back in class; why not ask pupils to look at job advertisements in the local paper to see how they are laid out. Pupils could then design their own for a job at Hollywood Bowl.
- 2) Pupils could apply for the jobs.
- 3) You could even have mock interviews!



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National Curriculum Links - Key Stage 2

Citizenship: 1e, 5e.
PSHE: 1e, 5e.

Jobs & Meeting People

Talk to the staff that you meet at Hollywood Bowl and find out what jobs they do. Use the information they give you to complete the table below.



| Title of Role | Key Tasks | Qualifications | Skills & Experience Necessary |
|---------------|-----------|----------------|-------------------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |