Topic 1(m) Using money to make money

List the different ways of gambling you can think of. You might want to think about bets placed on sports, games in a casino, games that are played every week, games at a fun fair, etc.

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Games of chance

The key feature of **gambling** is that people are taking a chance – they could win or lose.

So people who buy a lottery ticket know they could either win some money or win nothing at all. The National Lottery game 'Lotto' costs £1 per ticket. This means that people spend £1 in the hope of winning one of the prizes. If they win nothing, they are £1 worse off.

Other forms of gambling involve money placed as a bet, called a **stake**. For example, people who bet on horse racing pay a stake to the **bookmaker**. If their horse wins, they get back their stake and extra money on top. If they lose, they lose their stake.

Jimmy has bet £10 on a horse called 'Jenny's Choice' to win the 3:30pm race. His horse is first past the post, so Jimmy gets back his stake and has winnings on top.

Why do people gamble?

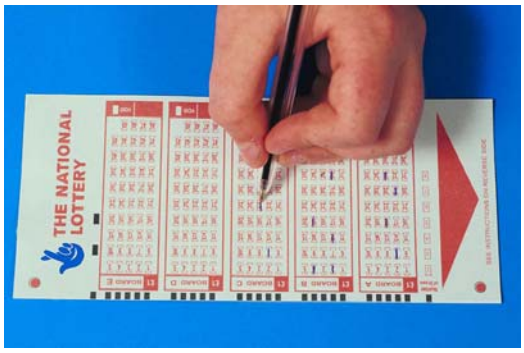
The National Lottery

The government introduced the **National Lottery** in 1994. The purpose of the lottery is to raise money for good causes, and to collect **lottery duty** (a form of tax) for the government. People are encouraged to play the lottery because they *could* win a lot of money (although this is very unlikely, as we will see later).

How old do you need to be to play the National Lottery games?

People can play different lottery games such as Lotto, Thunderball and scratch cards.

The main game, called Lotto, works like this: people choose six numbers between 1 and 49 and mark them on a pre-printed sheet of paper at a lottery play point. These play points are found in retailers like shops, garages, supermarkets, etc. Players pay £1 for each lottery line they choose. They hand this sheet of paper to the retailer who feeds it into a computer terminal. The terminal reads the sheet and prints out a lottery ticket showing the numbers.



Each week there are two lottery draws – one on Wednesday and one on Saturday. A special machine is used to select the six winning numbers. Great care is taken to make sure that the choice of lottery numbers is **random**.

Is the chance of the lottery machine selecting a particular number the same for all numbers between 1 and 49?

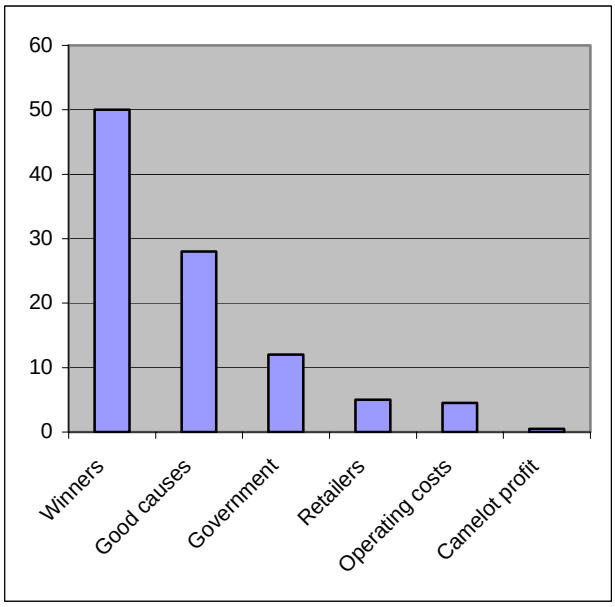
Camelot is the organisation that runs the National Lottery and all its different games. This organisation works for the government but is separate from it. Part of Camelot's role is to maximise the amount of money raised for good causes through the Lottery by encouraging people to play. You may have seen and heard the marketing campaign they ran with the catchphrase 'Don't win a little, win a Lotto'. More recent advertisements have Lady Luck explaining that you can't win the games if you do not play, and encouraging people to 'think lucky'.

Why does Camelot spend money to encourage people to play the Lottery?

Did you know?

People pay £1 for a Lotto ticket – this is how the £1 is used:

- 50p goes to the winners' fund;
- 28p goes to good causes;
- 12p goes to the government in a tax called 'lottery duty';
- 5p is paid to the retailers who sell Lotto tickets;
- 4.5p is used by Camelot to pay the costs of operating the Lotto;
- ½p goes to Camelot as profit.



The Big Lottery Fund (www.biglotteryfund.org.uk) distributes one-half of the money raised for good causes by the National Lottery – estimated at between £600 million and £700 million per year. The other half is distributed by other organisations. The lottery money is used to support good causes in the arts, sport, heritage, health, education, environment, community and charity sectors.

Q

Do you think the National Lottery is an effective way of giving to charity?

Did you know?

The National Lottery has raised £20 billion for good causes so far. Some of the big projects that have benefited from this money are:

- the Millennium Dome;
- the Eden Project;
- Tate Modern.

There have also been many smaller projects such as:

- renovating a recreation centre in Middlesbrough;
- supporting a disabled children's charity in Glasgow;
- building a new activities park in Swindon;
- providing a training programme for disadvantaged youngsters in Wales;
- paying for research in Northern Ireland to find a way of labelling medicines for visually impaired people.

How likely are you to win a prize on the Lotto?

The chance of any one ticket winning the Lotto jackpot is 1 in 13,983,816, i.e. one chance in almost 14 million. So somebody would need to buy 13,983,816 tickets (one of each combination of six numbers between 1 and 49) in a Lotto draw to be certain of winning the jackpot. Of course, the winning ticket could be the 8,000th they bought or the 1,000,000th or the last. They just can't know until the draw is made.

Number of matching numbers	Odds
Jackpot: matching all six numbers	1 in 13,983,816
Match 5 main numbers + bonus ball	1 in 2,330,636
Match 5 main numbers	1 in 55,492
Match 4 main numbers	1 in 1,033
Match 3 main numbers	1 in 57

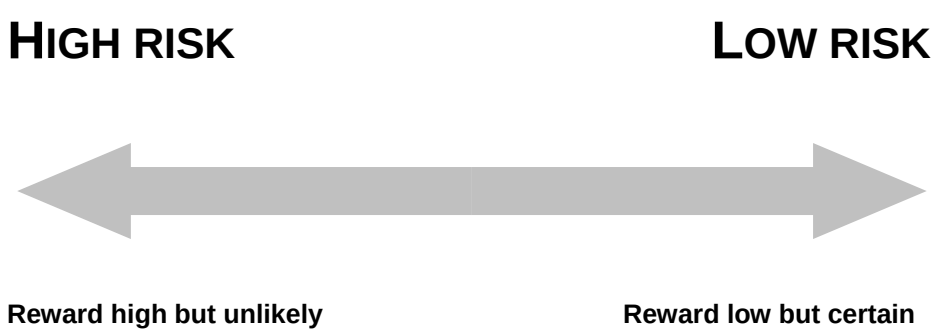
The overall odds of winning any prize are 1 in 54.

If you match 3 numbers, you win £10. The amount you win for the other prizes depends on the number of Lotto tickets bought for that draw and how many other people matched those numbers. For example, the total amount of prize money is one half of the value of ticket sales for that draw. The prize money at each level (for matching 4 main numbers, 5 main numbers, etc) is shared equally between all winning tickets.

Does someone win the jackpot every time there is a Lottery draw?

When nobody has won a Lotto jackpot the money is 'rolled over', i.e. added to the value of ticket sales for the next Lotto draw.

Below is a scale from a high to a low risk of losing your money. Where does the Lotto sit on this scale?



Premium Bonds

People can also win large sums of money if they buy **Premium Bonds**. **National Savings and Investments** (NS&I) sell and manage Premium Bonds as a way of saving money *and* having the fun of a prize draw every month.

When people buy Premium Bonds they are lending the money to the government. Premium Bonds do not pay interest to holders. Instead, the interest that is earned on all Premium Bonds is used to fund cash prizes. When people hold Premium Bonds they are swapping the interest rate they could earn on the money in a savings product for the chance of winning a big prize.

The prizes vary according to the interest rate and the number of bonds that are eligible for the draw. The following table shows the estimated Premium Bond prizes for October 2007, based on an interest rate of 4%.

Prize band	Prize value £	Number of prizes
Higher value (10% of prize fund)	1 million 100,000 50,000 25,000 10,000 5,000	2 20 39 79 197 395
Medium value (10% of prize fund)	1,000 500	4,748 14,244
Lower value (80% of prize fund)	100 50	223,241 1,452,827
Totals	**£118.7 million**	**1,695,792**

People can cash in all or some of their Premium Bonds at any time. Because NS&I is backed by the Treasury (a government department), the original amount of money that people put into Premium Bonds is 100% safe – bondholders will always get their money back. This is an important difference between Premium Bonds and the Lotto because people who buy Lotto tickets have lost the money they have spent if they do not win.

The minimum amount of money that people can put into Premium Bonds is £100, with a maximum holding of £30,000. People get a Premium Bond number for every £1 they invest. Every month all the eligible Premium Bond numbers are entered into a draw and winners are selected at random.

Q ***Does someone win the jackpot every time there is a Premium Bond draw?***

Did you know?

The machine that randomly selects Premium Bond numbers for prizes is called ERNIE (Electronic Random Number Indicator Equipment).

The machines used to randomly select Lotto numbers are also given names: Amethyst, Moonstone and Opal.

How likely are you to win a prize on the Premium Bonds?

The odds of any one bond winning a Premium Bond prize are 21,000 to 1. These odds change from time to time.

Did you know?

In 2007, there were 23.7 million bondholders, holding over £35 billion worth of Premium Bonds nationwide. Source: www.nsandi.com

In 2006/2007, sales of National Lottery tickets had a total value of just under £5 billion.

Source: www.camelotgroup.co.uk

How old do you have to be to own premium bonds?

Savings

Premium Bonds combine the idea of gambling and saving. Financial services providers offer many different savings products that involve no element of gambling.

Savings accounts are low risk and offer a known **rate of return.** Examples include **deposit accounts**, **notice accounts** and **individual savings accounts (ISAs)** from banks and building societies. People who save with these accounts will get back the original money they put in (their **capital**), plus extra money on top (the **interest** earned).

Earn 4.15% AER on your savings in the 30-day notice account from Trusty Bank.

The amount of interest paid varies from account to account and from provider to provider. It is worth shopping around and comparing savings options before you decide where to put your money.

How likely do you think you are to receive interest on savings in a bank or building society?

You are certain to get the published rate of interest on your savings.

Some savings accounts offer instant access to your money. Other savings accounts have terms and conditions that savers must follow if they want to get all the interest possible. For example, people who save their money in notice accounts get higher interest rates than people who save in instant access accounts. However, they need to give the provider a certain number of days' warning when they want to withdraw their money. If they give this notice, they keep all the interest their savings have earned. If they don't give enough notice, the provider keeps some of the interest.

Providers might change the interest rate offered on savings accounts, especially if the Bank of England changes the **base interest rate**. However, they must always tell savers about the change, so savers know what return they are getting. When people gamble they do not know if they will win or lose. With a savings account the saver always wins.

Financial services providers such as banks and building societies are confident of earning enough money to pay the interest on people's savings. This is because providers use some of the money in savings accounts to lend in the form of loans and mortgages. The interest rate that providers charge borrowers is always higher than the interest rate they pay savers. As long as people, companies and the government need to borrow money, the providers will earn enough to pay savers their interest rate.

Details of the savings products available are in other topic worksheets. In this topic we want to focus on the risk involved with savings accounts.

The only reason that providers would be unable to give savers their capital back plus interest is if the bank became bankrupt. How likely is it that a bank or building society on your high street will become bankrupt?

Investments

As well as savings accounts, financial services providers offer people the chance to invest their money. The difference between saving and investing is that investing does include an element of chance. Some people would argue that investing is a type of gambling, although the risk of losing money is very low compared to betting on horses or buying Lotto tickets.

Most investments are not guaranteed to return your capital in full. Nor can they guarantee a certain rate of return. For example:

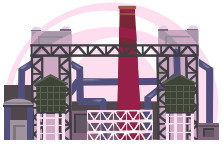
WARNING!

When buying stocks and shares remember that the value of your investment can go down as well as up.

There are a number of ways of investing.

What are the different ways of investing money that you have heard about?

Different types of investment have different levels of risk, e.g.



Buying stocks and shares in a particular company can be very risky because the investor could lose all their money if the company fails.

Buying into a pooled investment (such as a unit trust), where many investors put their money together to buy a range of stocks, shares and bonds, is less risky. This is the idea of 'not putting all your eggs in one basket' and is called **diversification**. Risks are reduced because it is *unlikely* that all the investments will lose money and *likely* that some will earn money.

Investors can also buy investment bonds. Investment bonds are loans to the government or to a company.

These bonds are different from Premium Bonds because they pay interest rather than cash prizes.

UK government bonds are considered a very safe investment because the government is very likely (almost certain) to repay the loan and make interest payments.

Investment products are covered in more detail in other topic worksheets. In this topic we focus on the risks involved in investing.

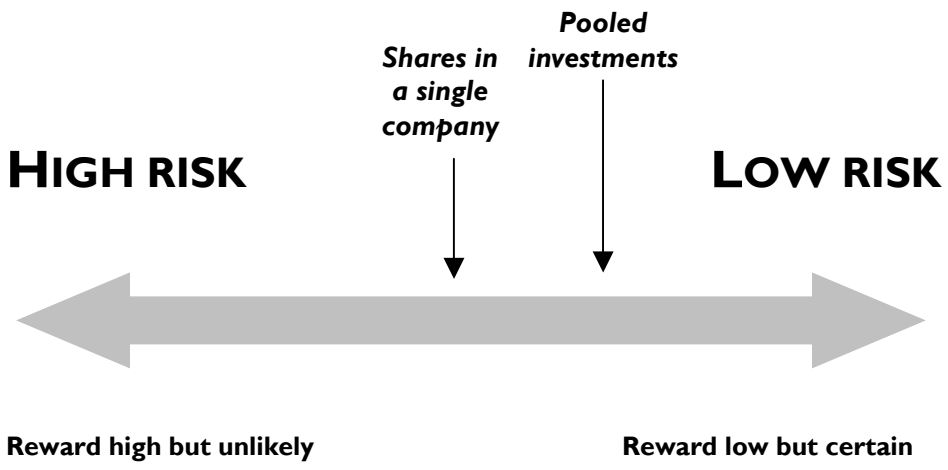
How likely are you to get a rate of return on your investments?

It is much more difficult to predict the rate of return from investments than from savings. For example, if people buy shares in a company and the company does well, they could get their money back and earn a lot more money (called **investment return** or **growth**) on top. If the company fails, the investors would lose all their

money. Investors can look at the past performance of a company and guess what will happen in the future, but they cannot be certain what the rate of return will be.

Investing in products like unit trusts reduces the risk, and also the potential return compared to buying shares in an individual company.

People who put money into a unit trust can usually choose the type of investments that their money is used to buy. This choice gives the investor some control over the amount of risk they are taking with their money. The investment company can give customers some idea of the return they will get. However, changes in the local and the global economy and unpredictable events like natural disasters can all affect the value of investments. So unit trust investors cannot be certain of the rate of return. They just know that compared to investing in a single company, their money is likely to give them a lower but more certain return.



Did you know?

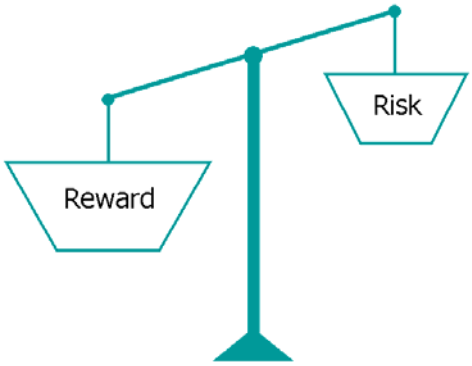
The Financial Services Authority (FSA) regulates the financial services industry. This means that the FSA sets the rules that providers must follow for their work. One of the rules is that investment companies must be very careful not to mislead people about the sort of return they could get from investments.

The FSA also provides information for people who use financial products: see www.fsa.gov.uk and then click on 'Consumer information'.

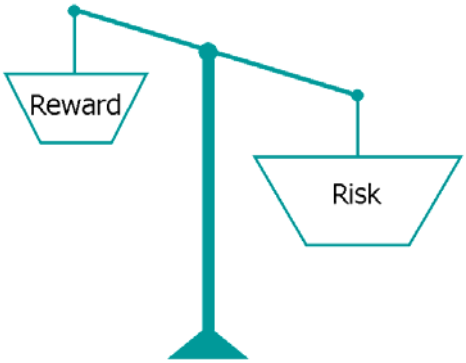
Risk versus Reward

Gambling such as casino games, the Lotto and betting on sports events tends to have a high element of **risk** – people just do not know what the outcome of their bet will be, so they could lose their money. The amount that people *could* win, the **reward**, may be great but actually winning can be very unlikely.

When people decide whether or not to gamble, they are weighing up the effect of the risk they are taking against the possible reward they could win.



If people think that the possible reward is *greater* than the risk, they probably will bet.



If people think that the possible reward is *less* than the risk, they probably will not bet.

How people see the risk and the reward of a situation is very personal to them. Some people have a very relaxed attitude to losing a few pounds – they think it is a price worth paying for the fun of gambling. Other people are very uncomfortable with risking any of their money.

I only gamble with the amount of money I can afford to lose

I don't find gambling fun, so I'd rather put my money somewhere safe

In some gambling situations, the winning answer cannot be predicted at all. Random results with a large number of possible outcomes, such as the Lotto, mean that the likelihood of winning is very low. We have seen that the odds of winning the Lotto jackpot are 1 in 13,983,816.

This means that people would need to buy 13,983,816 Lotto tickets with different combinations of six numbers to be sure of winning the jackpot. At £1 a ticket, this is an outlay of £13,983,816.

The amount of money jackpot winners receive depends on the value of the tickets sold and the number of people with the winning combination of numbers. Some jackpot winners have won £800,000 while others have won several millions of pounds.

Do you think that spending £13,983,816 to possibly win less than £1,000,000 would be a good return on your money (if you had this much money)?

In other gambling situations, the odds are reduced if the gambler knows something about the subject of the bet. For example, suppose someone asked you to bet whether Meghalaya or Quillague would have the most rain next year?

Your odds of getting the correct place would be 50:50 or 1 chance in 2 if you knew nothing about the amount of rain each place tends to get.

However, you would have a much better chance of winning the bet if you knew that:

Meghalaya	Is a state in North East India Average annual rainfall is 11.87 metres It is the wettest place on earth
Quillague	Is in the Atacama Desert in Chile Average annual rainfall was 0.5 millimetres between 1964 and 2001 It is the driest place on earth

Source: www.guinnessworldrecords.com

It is therefore very likely that Meghalaya will have more rain than Quillague. However, it is not certain. There could be very strange weather that means Quillague got rain while Meghalaya was having a drought.

Using knowledge about the subject of the bet is one way that people feel they can reduce risk. Let's take an example from horse racing.

Bookmakers set the odds on different horses in a race based on the past performance of the horse (its form) and how much money people have already bet on it to win. People who want to bet on horses can look at the bookmakers' odds and see which horses the bookies think will win. The odds:

- are 2:1 on horse A. This means that a gambler will win £2 for every £1 they bet on that horse;
- for horse B are 1:2 which means that a gambler will win £1 for every £2 that they bet.

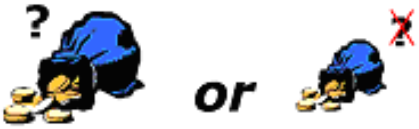
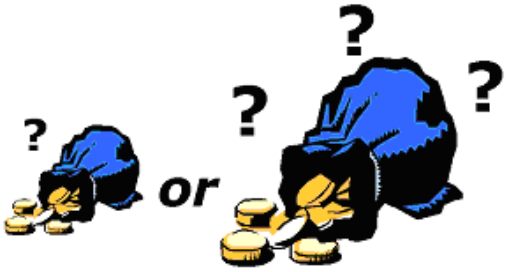
These odds show that the bookies think horse B is more likely to win the race.

The science of likelihood is called **probability**. Mathematical equations can be used to work out how likely it is that an event will occur. If something is certain, then you cannot make a bet on it, e.g. a one-horse race.

The specialists who manage pooled investments use their knowledge of the financial markets and probability to decide which investments to buy and sell. This is another reason why investing in a pooled investment is less risky than buying the shares of an individual company.

Making a decision: gamble, save or invest?

When making a decision about whether to gamble, save or invest money, people will consider the probability of getting the reward against the risk involved.

Gambling versus saving  	People who gamble take a big risk of losing their money because there is a small chance they could win, and they usually lose their stake. People who save with a financial services provider are taking almost no risk with their money. There is no chance of a big prize, but a smaller reward is certain. Plus they will get back the money they put into the savings account.
Investing versus saving  	Investors usually take some chances compared to savers. The rewards they could receive are larger than for saving, but there is more chance that they will lose some money. So when people put money into most types of investment, they are taking a gamble.
Investing versus gambling  	The risks involved in pooled investments are much, much less than in games of chance. At worst, pooled investments are likely to return most of the investors' capital, and they may return all of it plus growth. But if people bet on sports or the Lotto, they are likely to lose all their money and get no return, i.e. winnings, at all.

Review questions

1. What is 'gambling'?
2. Why did the government introduce the National Lottery?
3. How much of the £1 spent on a Lotto ticket goes to the following people:
   a. winners;
   b. good causes;
   c. Camelot?
4. What are the odds of winning the Lotto jackpot (approximately)?
5. Why does putting money into Premium Bonds have a lower risk than playing Lotto?
6. Who sells and manages Premium Bonds?
7. What is the biggest monthly prize that holders of Premium Bonds can win?
8. Why are savings accounts a lower-risk savings option compared to Premium Bonds?
9. Do savers know what rate of return they will get from their financial services provider?
10. What is the difference between saving and investing?
11. What do the following terms mean:
    a. risk;
    b. reward;
    c. probability?
12. Where do the following options sit on the risk/reward scale:
    a. Lotto;
    b. savings accounts;
    c. Premium Bonds;
    d. Investments?

HIGH RISK **LOW RISK**

Reward high but unlikely **Reward low but certain**

Case studies

1. In '**A decade of winning (and losing)**', an article on www.bbc.co.uk, for 4 November 2004, Sarah from the Wirral is quoted as saying:

   '*Most people I know stopped putting money on the lottery a few years ago. There is such a remote chance of actually winning anything you have a better chance of making money by depositing the £1 a week into a savings account. In the 10 years I have taken part I have only won £10 on one occasion and that was right at the start – since then I have given away more than I have won. I think if there was more of a chance of winning, even if it was more, but smaller prizes, then you would be more likely to take part.*'

   Why might Sarah prefer buying some Premium Bonds to doing the National Lottery?

2. Matthew's employer has given him a bonus of £200 this month. Matthew is trying to decide what he should do with the money.

   List the advantages and disadvantages of Matthew using this money to:

   a. buy Lotto tickets;
   b. buy Premium Bonds;
   c. open a savings account;
   d. buy shares in a company.

Learning activities

Internet

1. The National Lottery was set up to benefit 'good causes'. Go to www.biglotteryfund.org.uk, choose the Newsroom link, then select your region of the country and click the search button to find out what initiatives have lottery funding in your area.
2. Go to www.moneyfacts.co.uk and find out what savings accounts are offering the highest interest rate at the moment. Check what terms and conditions are attached to these accounts.
3. Go to www.fsa.gov.uk, click on Consumer Information and find the advice on choosing savings products and investments.

Group

1. Research some facts that you think other students will not know. Make up a question based on the fact. Then ask the other groups to guess the answer by writing all their possible answers down. Count the number of guesses made and the number of correct answers (if any). This will show you what the odds are that someone can guess correctly at random.

2. Hold a debate on the topic, 'The National Lottery has encouraged people to give money to charity'.
3. Collect literature about savings and investment from banks, building societies, supermarkets, the Internet and newspapers. List the:
   a. warnings that appear in the literature about risk;
   b. products that guarantee you will get back your capital;
   c. products that guarantee a rate of interest;
   d. products that cannot guarantee the safety of your capital or that you will receive a certain amount of interest.
4. Get information about Premium Bonds from the Post Office. What interest rate and odds to win are given in the literature?

Individual

1. Think about your own views on gambling versus saving. Do you feel comfortable gambling with your money? If you had some money to spare, would you gamble with it or save it? You do not need to share your thoughts with anyone else.
2. Visit the financial providers in your high street and get lists of interest rates for savings accounts. Compare the interest rates and the conditions for these accounts and decide which account is best from your point of view. List the reasons for your choice.

   What you consider is the 'best' account might be different from other people in your class – this is because everyone's preferences and attitudes to risk and reward are different.

Key points for Using money to make money

- ☐ When people gamble they are taking a chance – they could win or lose.
- ☐ People buy a ticket or pay a stake to gamble.
- ☐ The government introduced the National Lottery in 1994 to raise money for good causes and increase revenue for the government from lottery duty.
- ☐ The main National Lottery game is called Lotto. Players try to match six numbers (from 1 to 49) that are randomly selected by a draw machine. The money that players can win depends on the total value of tickets sold for that draw and the number of people who have matched the numbers.
- ☐ Camelot runs the National Lottery and maximises the amount of money raised for good causes by advertising the games – £20 billion has been raised for good causes so far.
- ☐ Out of every £1 spent on a Lotto ticket: 50% goes to the winners, 28% goes to good causes, 12% goes to the government as lottery duty, 5% is paid to the retailers who sell tickets, 4.5% is used by Camelot to pay operating costs and 0.5% goes to Camelot as profit.
- ☐ The Big Lottery Fund distributes half of the money raised for good causes. The money is spent in the arts, sport, heritage, health, education, environment, community and charity sectors.

- The odds of winning the Lotto jackpot are 1 in nearly 14 million. The odds of winning any Lotto prize are 1 in 54. The Lotto does not offer a good return on your money. People play because it is fun and they hope they will be lucky.
- Premium Bonds combine the safety of savings and the fun of a draw for big cash prizes.
- Premium Bonds are sold and managed by National Savings and Investments (NS&I). The money put into Premium Bonds is 100% safe because the Treasury guarantees to repay it. People can put between £100 and £30,000 into Premium Bonds and get back their money at any time. For every £1 they put into the bonds, people get one Premium Bond number. These numbers are put into a prize draw every month.
- Instead of paying interest to the bondholders, NS&I use the interest earned on all Premium Bonds to fund cash prizes. In each monthly draw there are two £1 million prizes and more than a million other cash prizes. The odds of a Premium Bond winning a prize are 21,000 to 1.
- People need to be 16 or older to play the Lotto or buy Premium Bonds in their own name. Younger people can have Premium Bonds. However an adult must manage the bonds and any prizes they win on the young person's behalf.
- Saving is very different from gambling. The amount of money people save (the capital) is safe as long as they save with a financial services provider like a bank or building society. The amount of return on savings accounts is known, rather than being a gamble. Interest rates can change, but the provider always tells the saver what the new rate is.
- When people gamble they run the risk of losing money. Savers cannot lose.
- Investments are more risky than savings. If people buy shares in a single company it is possible they could lose their money. However, most investors use pooled investments.
- The specialists that manage pooled investments, such as unit trusts, buy a combination of stocks, shares and bonds in many different companies and the government. Buying a range of investments means that the risk of losing money is reduced.
- It is more difficult to predict the rate of return on investments than on savings. The value of units in pooled investments can go down as well as up, depending on what happens in the financial markets.
- When people decide what to do with their money they weigh up the possible risks against the possible rewards.
- Gambling offers the chance of big rewards but the risk of losing all your money is very high. People are unlikely to win. Investments offer potentially higher rewards than saving but at an increased risk. Saving offers low risk and a lower, but more certain return. Savers will definitely 'win' because they will definitely make money.