

Name:

Class: Scotney

Teacher: Ms Hewitt

Knowledge Organiser

Term 5



"Wisdom... comes not from age, but
from education and learning."

Anton Chekov

How to use your Knowledge

Organiser

Using in Class

Quiz your neighbour	Your teacher will give you a topic and you can create questions to test your neighbour's knowledge and understanding
Multiple choice quiz	A quick quiz based on the knowledge organiser
Key words	Tell your teacher if any key words from your knowledge organiser come up in lessons
Spelling Tests	Using the key words, your teacher might give you some spelling tests
Extended Writing	Using this key information, create longer pieces of writing showing your specialist knowledge
Knowledge test	At the end of the unit, your teacher might give you a test based on your knowledge organiser

Using at Home

Catching up	Use the knowledge organiser to catch up on any lessons you have missed
Quiz yourself	Read through the information, repeat it to yourself, cover and test your knowledge
Create Flashcards	Turn the information in to revision cards
Application	Use this information to add to any homework or classwork, including longer pieces of writing
Revise	Use the information to revise for any assessments or end of topic tests

Key terms:

- Probability
- Probability Scale
- Random
- Probability Diagrams
- Experimental probability
- Theoretical Probability



Maths Probability

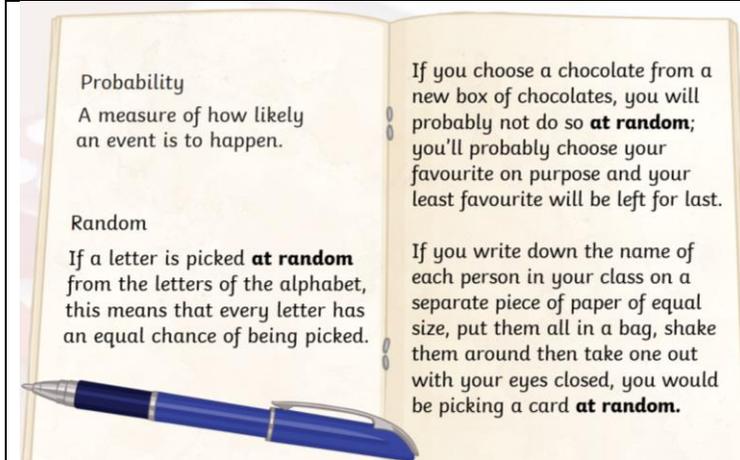


Describing Probability Using Words

We can show these descriptions of probability on a probability scale:



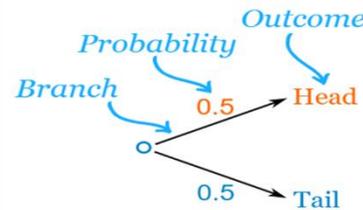
Even chance has to be right in the middle, because it describes a situation where the probability of an event happening is exactly equal to the probability of it not happening.



Probability Tree Diagrams

Calculating probabilities can be hard, sometimes we add them, sometimes we multiply them, and often it is hard to figure out what to do ... **tree diagrams to the rescue!**

Here is a tree diagram for the toss of a coin:

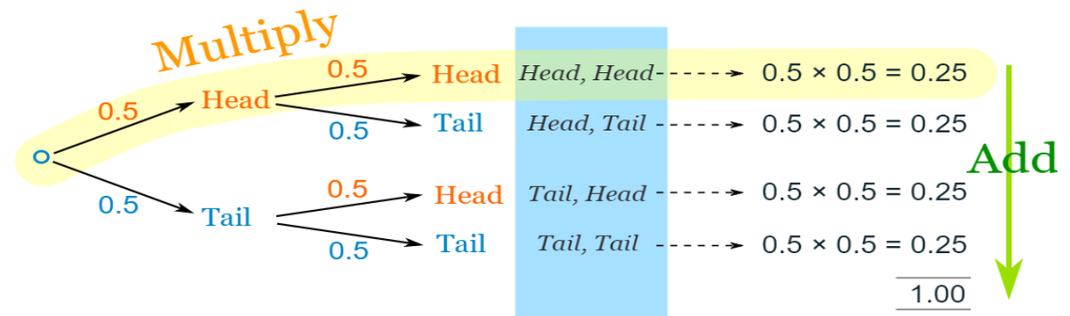


There are two "branches" (Heads and Tails)

- The probability of each branch is written on the branch
- The outcome is written at the end of the branch

How do we calculate the overall probabilities?

- We **multiply** probabilities **along the branches**
- We **add** probabilities **down columns**



Types of Questions

Using Numbers to Measure Probability

There are 3 red sweets, 5 green sweets and 4 yellow sweets in a jar. When one is picked out at random, what is the probability that it is... green?

5/12

Because 5 of the sweets are green and there are 12 altogether.

PROBABILITY TREE DIAGRAMS

chemical energy store	thermal energy store	gravitational potential energy store
magnetic energy store	kinetic energy store	elastic potential energy store

Science

Energy Transfers and Energy Costs

The Cost of Electricity

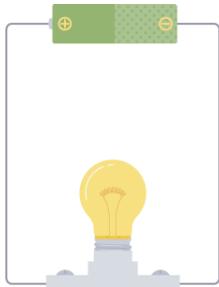
To work out how much a device costs we do the following:

$$\text{Cost of electricity} = \text{Power (kW)} \times \text{time (h)} \times \text{cost per kWh (p)}$$

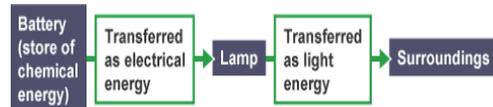
Energy transfer diagrams

Energy transfer diagrams may be used to show the locations of energy stores and energy transfers.

For example, consider the energy transfers in this simple electrical circuit:



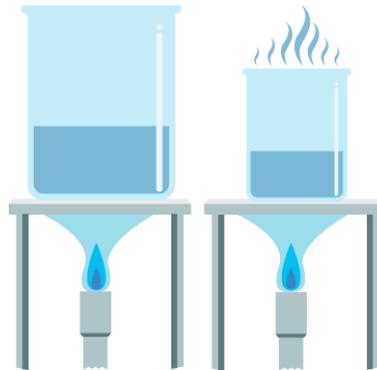
Circuit with a battery and two lamps connected in series
We can show the transfers like this:



Battery (store of chemical energy). Energy is transferred as electrical energy to a lamp. Energy is transferred as light energy to the surroundings

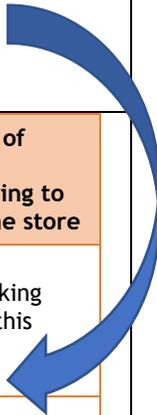
Heat Experiment

To boil water we must increase its temperature to 100°C. It takes longer to boil a large beaker of water than a small beaker. This is because the large beaker contains more water and needs to gain more internal energy to reach 100°C.



When heated, the temperature of a small beaker of water will increase faster than the temperature of a large beaker of water

Energy stores	Definition	Example of energy transferring to fill the store	Example of energy transferring to empty the store
Kinetic energy store	Energy stored in moving objects. The store empties as an object slows down.	A runner speeding up fills this store.	A car braking empties this store.
Gravitational Potential energy store	This store fills as an object is lifted higher.	Lifting a book above your head fills this store.	A parachutist jumping out of a plane empties this store.
Chemical energy store	Energy stored in the bonds of chemical compounds. The energy in this store is decreased if the bonds are broken.	During photosynthesis, this energy store is filled - as energy is stored in the bonds of the glucose molecules.	A fuel being burnt empties this store.
Elastic energy store	This store fills as an object is squashed or stretched.	A catapult being stretched back fills up this store.	A jack in the box being released empties this store.
Thermal energy store	The energy in this store increases as the temperature increases.	A storage radiator cooling down empties this store.	Melting ice empties this energy store.

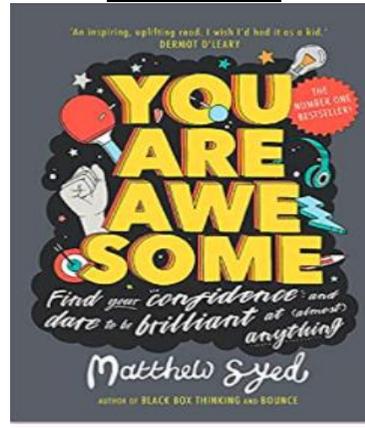


National Curriculum Aims:

1. Retrieve and record information from a variety of non-fiction texts.
2. Identifying the intended audience and purpose of the non-fiction texts studied.

English

Non-Fiction



Fiction vs Non-Fiction

<p>Fiction</p> <p>Refers to plot, settings and characters created from the imagination.</p> <p>We read or watch this material for fun.</p> <p>Example:</p> <ul style="list-style-type: none"> • A book about a cat that talks. • A cartoon on TV. 	<p>Non-fiction</p> <p>Refers to factual stories that are based on real people and true events.</p> <p>We read or watch this material for information.</p> <p>Example:</p> <ul style="list-style-type: none"> • A book about animal life cycle. • A documentary on TV.
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Non-Fiction Topics:

- Famous Autobiographies
- Climate Change
- Politics
- Titanic Sinking

Narrative Perspective (Voice)

First-Person	I, me, my, mine, we, us, ours,
Second-Person	you, your
Third-Person	he, she, her, they, them (also character's names)

Persuade Your Audience!

Spellings

Awesome	Parliament
Voice	Climate
Broadsheet	Instruction
Newspaper	Rhetorical
Diary	Persuade
Autobiography	Narrative
Informative	Audience
Adversity	Fact
	Opinion
	Triumph

Examples of persuasive devices

Alliteration

Listen to these sentences:

Carmen carefully caught Carl.

Steve saved seven seagulls.

Brian bought black brollies.

What do you notice about each?

Each word begins with the same sound

Fact

A fact is a true statement about something that can be tested and proven to be true.

For example, "the sun is hot" is a fact because we can test the temperature of the sun and prove that it is hot.

Opinion

An opinion is what someone thinks. An opinion cannot be tested since it is always changing.

For example, "broccoli is so yummy" is an opinion because the statement is someone's belief about broccoli. Tomorrow, that same person may think broccoli is the most disgusting food ever!

RHETHORICAL QUESTIONS

- How could you? - Is this a joke?
- Are you crazy?
- Why is this happening to me?
- Who cares?
- Does money grow on trees ?

Examples of Emotive Language

Negative Emotive Words

liar, cheat, lazy, rude, thoughtless, disgusting, slimy, sleazy

Positive Emotive Words

beautiful, friendly, intelligent, talented, athletic, kind, thoughtful

Evaluative or Value-laden Words

important, valuable, significant, innocence, guilt, serious

Statistics:

We asked 100 people what their favourite food was. 2/3 said pizza but 25% said burgers.

Triple (rule of three):

- The *small brown scared* bird flew away.
- We can do it. We must do it. We will always do it.

Features of different Non-Fiction types

Broadsheet News Article

- Written in third person
- Headline
- Subheading
- Picture and caption
- Who, what, when, where, why in first three paragraphs
- Quotations included
- Sizeable paragraphs
- Formal language

Tabloid News Article

- Written in third person
- Catchy headline
- Subheading
- Picture and caption
- Who, what, when, where, why in first three paragraphs
- Quotations included
- Short paragraphs
- Formal language but some slang and puns used

Magazine Article

- Written in first or third person
- Headline
- Subheadings (often throughout)
- Language and style tailored to audience
- Picture and caption
- Inset boxes used

Formal Letter

- Written in first person
- Your address top right
- Their name, job title and address top left
- Date top right
- Begins "Dear...,"
- Ends "Yours sincerely," or "Yours faithfully,"
- Formal language
- Sizeable paragraphs

Report

- Written in third person
- Title
- Subheadings throughout
- Formal language
- Facts, figures and statistics used
- Clear, factual conclusion

Speech

- Written in first person
- Begins with formal greeting
- Sizeable paragraphs
- Rhetorical devices
- Language adapted to audience
- Memorable sign-off

Opinion Column

- Written in first person
- Headline
- Subheading
- Personal anecdotes included
- Rhetorical language included
- Sizeable paragraphs
- Formal but personal language

Diary Entry / Blog

- Written in first person
- Date
- Sometimes prefaced "Dear Diary"
- Personal anecdotes included
- Language reflects writer - usually informal
- Sizeable paragraphs

Autobiography

- Written in first person
- Often an extract from a larger work
- Use of anecdote
- Uses past tense
- Personal style
- Informal language

Review

- Written in first person
- Title
- Details of what is being reviewed, including names of actors/authors etc.
- Opinion explained in detail
- Star rating given

Leaflet

- Written in third person
- Title
- Subheadings throughout
- Inset boxes
- Images and captions
- Often includes a "call to action"

Informal Letter / Email

- Written in first person
- Begins with informal greeting
- Ends with informal sign-off
- Informal language, adapted to audience
- Paragraphs lengths vary

