

Differentiated Science of Learning (SoL) Workshop

Supporting Workbook



Shaping Minds

The science of learning meets the art of teaching

 **INSIGHT**

Welcome

Wherever you may be on your learning and teaching journey, today's differentiated learning will provide an interactive experience for educators across our system, both primary and secondary.

This workbook provides a scaffolded framework for reflective notes and engagement in rich SoL resource materials. The session has been matched to your indicated current understanding of SoL principles.

Every session includes interactive opportunities focused on SoL evidence-based practice, Cognitive Load Theory, and High Impact Teacher Practice (HITP).

Which session is right for me?

Group 1: Emerging

I'm interested in the Science of Learning movement and I'm keen to learn more about High Impact Teaching Practice. I am yet to try this in my teaching.

Group 2: Consolidating

I'm beginning to apply the principles of High Impact Teaching Practices and I'd like to advance my core knowledge and refine my practice.

Group 3: Advanced

I'm actively practising High Impact Teaching based on the Science of Learning. I would like expert advice on how to continue to grow my practice in my school context.

Group 1: Emerging



Shaping Minds

The science of learning meets the art of teaching



Engagement Norms

Pronounce with me

Track with me

Read with me

Gesture with me

Pair-share

Attention signal

Whiteboards

Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers

A fraction is part of a whole.

Numerator 1
Denominator 2

Proper
Fractions

Denominator larger than
the numerator.

$$\frac{3}{5}$$

Improper
Fractions

Numerator larger than the
denominator.

$$\frac{5}{3}$$

Mixed
Numeral

A whole number and a
fraction.

$$2\frac{2}{3}$$

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Attention signal

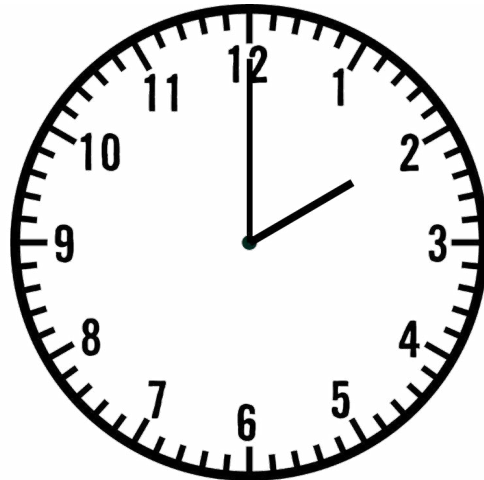
Whiteboards

Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers



2 o'clock

There are 12 hours on a clock.

The little hand on a clock shows hours.

When the long hand is on the 12, it is o'clock.



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Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers

ay represents the long a sound at the end of a word.

ai represents the long a sound in the middle of a word.

pain
rain
train
mainain

pay
ray
tray
display

Engagement Norms

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Attention signal

Whiteboards

Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers

Direct speech is the writing of the exact words that somebody says.

Direct speech

"Get your books out," said the teacher.

"May I please have some cheese?" asked Tom.

"That chair stinks," complained Sophie.

Not direct speech

The teacher told the children that they should get their books out.

Tom asked for some cheese.

Sophie complained that the chair stunk.

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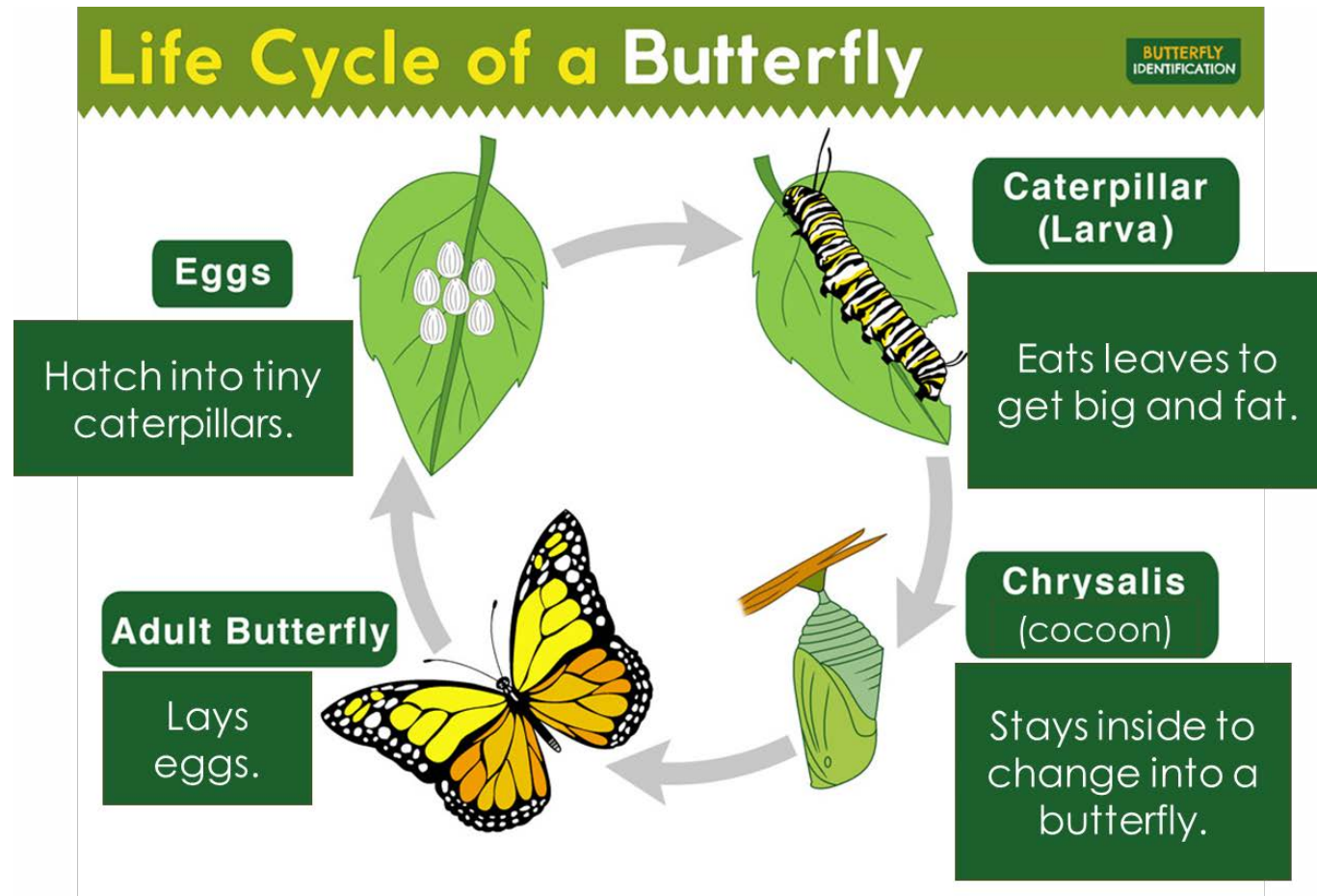
Whiteboards

Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers



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Choral Reversal

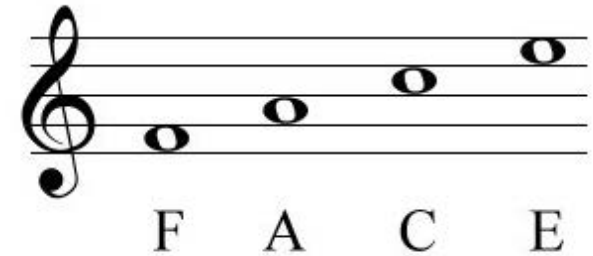
Non-Volunteers

The notes in the spaces on a treble clef spell **FACE** from bottom to top.

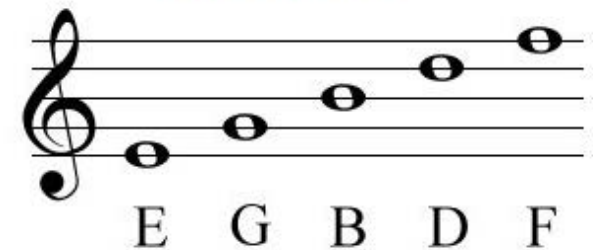
The notes on the lines of a treble clef are:

E – G – B – D – F.

Space Notes



Line Notes



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Whiteboards

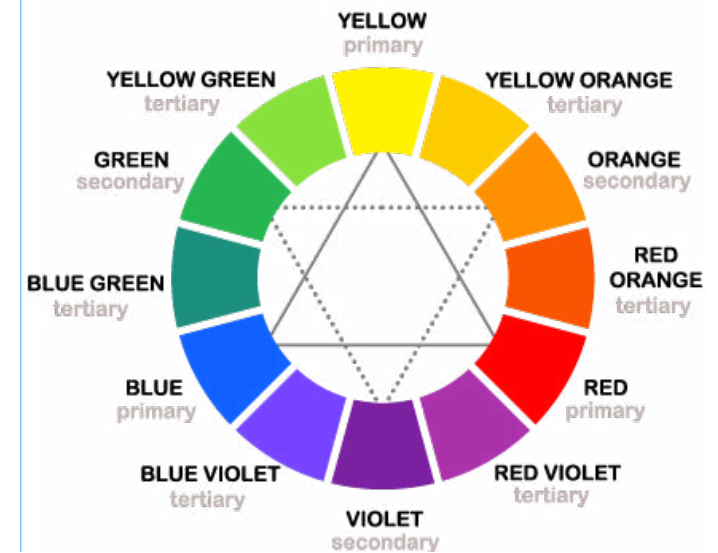
Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers

- Primary colours are Red, Blue and Yellow
- A secondary colour is made by mixing two primary colours
- A tertiary colour is made by mixing a primary colour with a secondary colour.



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Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers

- Healthy foods come from nature and are good for you.
- Sometimes foods are **processed**.
- **Processed** means that sugar, fat or salt has been added to make the food.



Low fat milk is a healthy food because it comes from nature and is good for you.



Chocolate milk is a sometimes food because sugar has been added to make it.

Engagement Norms

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Whiteboards

Complete Sentences

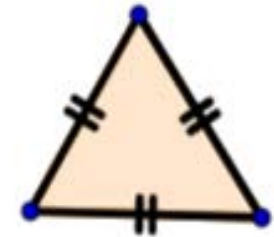
Choral Response

Choral Reversal

Non-Volunteers

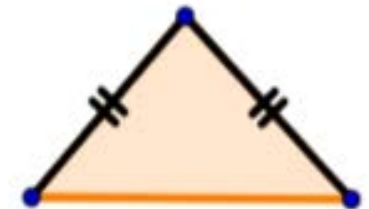
Equilateral

All sides and angles are equal



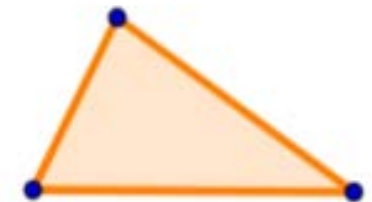
Isosceles

Two sides and angles are equal



Scalene

All sides and angles are different



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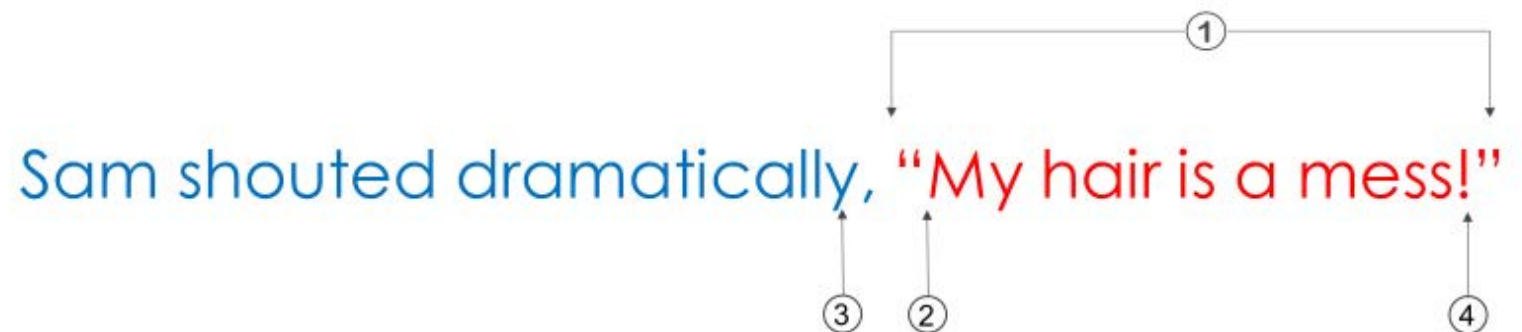
Direct Speech Rules

Rule 1: We put quotation marks around **what was said**.

Rule 2: **What was said** begins with a capital letter.

Rule 3: Separate **who said it** from what was said with punctuation.

Rule 4: Finish the sentence with end punctuation.



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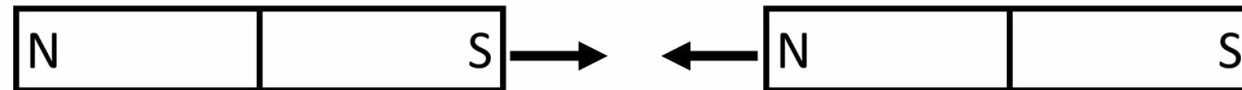
Complete Sentences

Choral Response

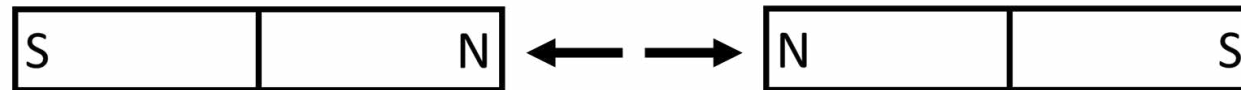
Choral Reversal

Non-Volunteers

Magnets have a north pole and a south pole.



Opposites attract: When the south pole of a magnet is put near the north pole of another magnet.



Like poles repel: When two north poles or two south poles are put together, the magnets push apart.

Engagement Norms

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Choral Reversal

Non-Volunteers

Law of Supply

- When supply is low and demand is high, prices increase.
- When supply is high and demand is low, prices decrease.

Law of Demand

- When the price of a good/service is high, demand decreases.
- When the price of a good/service is low, demand increases.

Engagement Norms

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Read with me

Gesture with me

Pair-share

Attention signal

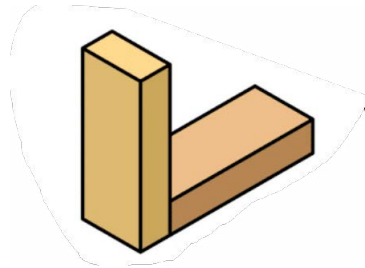
Whiteboards

Complete Sentences

Choral Response

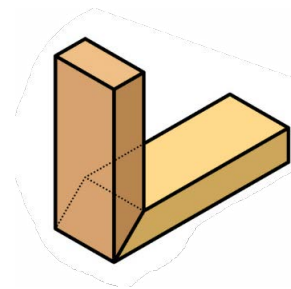
Choral Reversal

Non-Volunteers



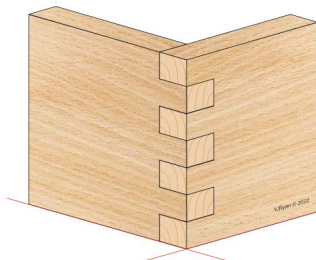
Butt Joint

Weak and ugly but quick and easy. Used for building framing.



Mitered Butt Joint

Two pieces are cut at 45° then joined. Weak but looks nicer than a butt joint. Used in picture frames and furniture.



Finger Joint

Notches are cut in the pieces of wood so they fit together. Used in boxes and drawers.

Engagement Norms

Pronounce with me

Track with me

Read with me

Gesture with me

Pair-share

Attention signal

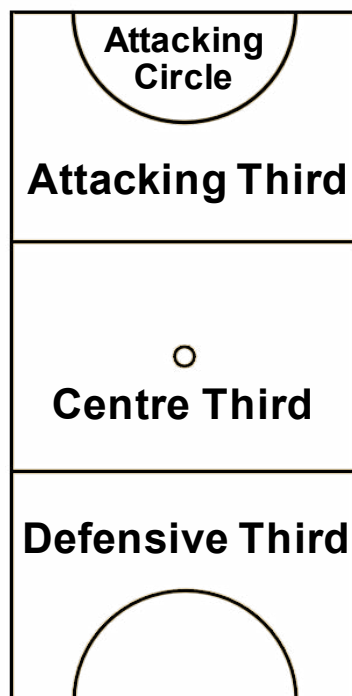
Whiteboards

Complete Sentences

Choral Response

Choral Reversal

Non-Volunteers



Goal Shooter (GS)

Can enter the attacking circle and the attacking third.

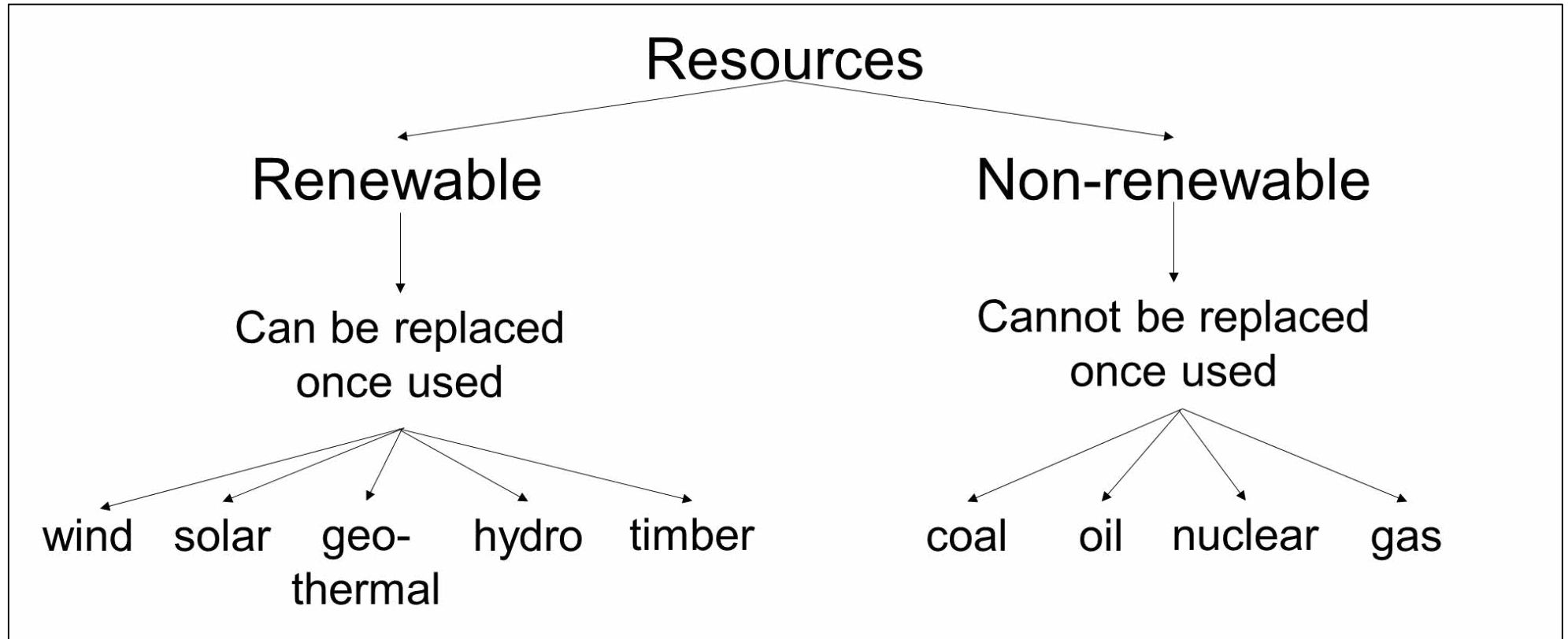
Goal Attack (GA)

Can enter the centre third, attacking third and attacking circle.

Wing Attack (WA)

Can enter the centre third and attacking third.

Group 2: Consolidating

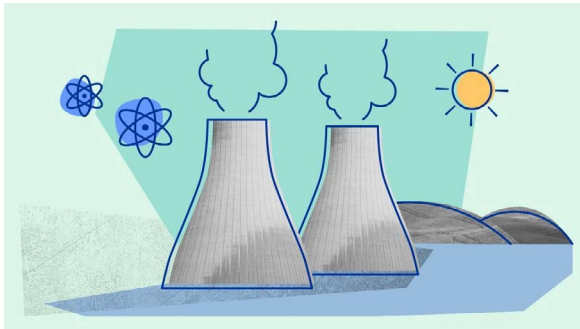


Timber is a renewable resource because ...

Gas is a non-renewable resource because ...

Which of these are renewable resources?

A



nuclear

B



wind

C



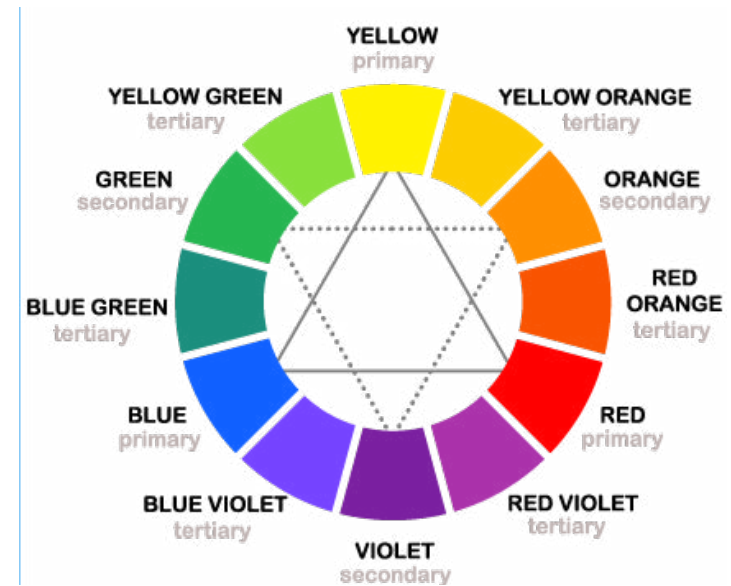
gas

D



timber





- Primary colours are Red, Blue and Yellow
- A secondary colour is made by mixing two primary colours
- A tertiary colour is made by mixing a primary colour with a secondary colour.



Green is a secondary colour because ...

Red-orange is a tertiary colour because...

Which of these are secondary colours?

A  Blue	B  orange
C  green	D  Red-orange

- Healthy foods come from nature and are good for you.
- Sometimes foods do not come from nature, or they are **processed**.
- **Processed** means that sugar, fat or salt has been added to make the food.



Low fat milk is a healthy food because ...



Chocolate milk is a sometimes food because ...

Which of these are sometimes foods?

A



Fruit bars

B



Cookies

C



Raw almonds

D



Flavoured water

Hyperbole is an extreme exaggeration used for emphasis.

✗ I have lots of homework to do.

✓ I have a mountain of homework to do.

‘I’m really hungry.’ is not hyperbole because...

‘I’m so hungry I could eat a horse.’ is hyperbole because...

Which of these are examples of hyperbole?

A Wow! It's very cold outside!	B It's so cold outside that my toes have frozen off.
C I've asked you a million times to put the seat down.	D How many times have I asked you to put the seat down?

Proper Fractions have a denominator larger than the numerator.	$\frac{3}{5}$
Improper fractions have a numerator larger than the denominator.	$\frac{5}{3}$
Mixed numerals have a whole number and a fraction.	$2\frac{2}{3}$

$$\frac{5}{4}$$

five quarters is an _____ because...

$$1\frac{3}{5}$$

One and three fifths is a _____ because...

Which of these are improper fractions?

A $\frac{1}{5}$	B $4\frac{2}{7}$
C $\frac{10}{4}$	D $\frac{9}{5}$

Sometimes we add **es** to a word to make a plural.

If a word ends in -s, -sh, -ch, -x, or -z, you add -es.

one dress → lots of dress**es**

one bush → two bush**es**

one punch → many punch**es**

one box → three box**es**

one buzz → many buzz**es**

I would add

s
es

to the word dish to make it plural because...

I would add

s
es

to the word duck to make it plural because...

Which of these are correct?

A



watches

B



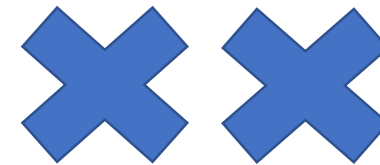
froges

C



dishes

D



crosses

Group 3: Advanced

Feedback Formulae

Positive

1. _____

2. _____

Constructive

1. _____

2. _____

3. _____

4. _____

Missed Opportunities

_____ – Is there an

Engagement Norm or CFU strategy that would have elicited more responses or participation?

_____ – Is there an

Engagement Norm or CFU strategy that would have promoted more thinking or practice?

_____ – Could a different

Engagement Norm or CFU strategy achieve the same thing but in less time?

_____ – Is there an

Engagement Norm or CFU strategy that would have given the teacher more useful information about student performance/understanding?



Missed Opportunities

_____ – Is there an Engagement Norm or CFU strategy that would have elicited more responses or participation?

_____ – Is there an Engagement Norm or CFU strategy that would have promoted more thinking or practice?

_____ – Could a different Engagement Norm or CFU strategy achieve the same thing but in less time?

_____ – Is there an Engagement Norm or CFU strategy that would have given the teacher more useful information about student performance/understanding?



Task 1

You need to be in pairs for this session. Decide now who is Person A and Person B.

Person A

Use the *positive feedback formula* to deliver positive feedback for this scenario.

Person B delivered a Daily Review and you noticed that they prompted a good volume of student practice using student whiteboards.

Person B

Use the *positive feedback formula* to deliver positive feedback for this scenario.

Person A delivered a Daily Review and you noticed that they did a good job prompting student practice and discussion using Pair Share.

[illegible]

Task 2

Person A

Use the *constructive feedback formula* to deliver constructive feedback for this scenario:

Person A delivered a Daily Review, and you noticed that they utilised Pair Share but they didn't call on individual non-volunteers afterwards.

Person B

Use the *constructive feedback formula* to deliver constructive feedback for this scenario:

Person B delivered a Daily Review, and you noticed that they read a volume of clear and concise written information to students but didn't have students interact with it using strategies like Read with Me or Choral Response.

