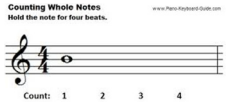
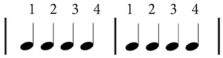
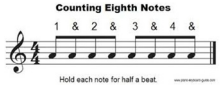
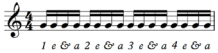
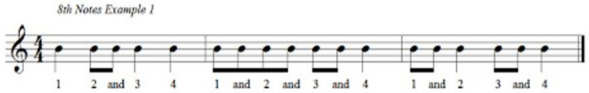
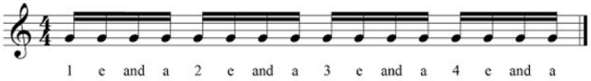
MUSIC

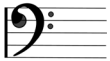
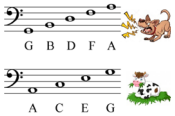
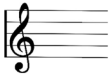
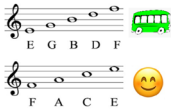
Rhythm & Pitch

Symbol	Name	Value	How to Count
𝅝	**Semibreve**	4	
𝅗𝅥	**Minim**	2	
♩	**Crotchet**	1	
♪	**Quaver**	½	
♫	**Semiquaver**	¼	

Try tapping out some of these rhythms while you count:





Pitch	Visual Representation	Features	Description
Low Pitch		Bass, Cello, Tuba, Trombone use this clef.	This is the bass clef, sometimes called the F clef.
Low Pitch Notes		There is an easy way to remember the lines and spaces: **G**reat **B**ig **D**ogs **F**righten **A**untie. **A**ll **C**ows **E**at **G**rass.	The bass clef is used to notate low pitch instruments.
High Pitch		Violin, clarinet, right hand piano.	This is the treble clef, sometimes called the G clef.
High Pitch Notes		There is an easy way to remember the lines and spaces: **E**very **G**reen **B**us **D**rives **F**ast. **F A C E**.	The treble clef is used to notate higher pitch instruments.
Low and High Voices Acronym: **SATB**		Peoples singing voices range from low to high. Male voices are lower, female voices are higher.	**S**oprano: Highest female voice. **A**lto: High female voice. **T**enor: Mid-range male voice. **B**ass: Low male voice.

Self-Test Questions

1. Which clef would a bass guitar use?
2. Which is the highest pitch female voice?
3. What does SATB stand for?
4. Which clef does higher sounding notes use?
5. A clarinet would use which clef?

Super Challenge Question

1. Which clef would a piano use?

Truncation

Truncate 3.828 to
1 decimal place

3.8|28 — We ignore any digits after the first decimal place. So the answer is 3.8

Truncate 3.828 to
2 decimal places

3.82|8 — We ignore any digits after the second decimal place. So the answer is 3.82. Notice that if we were to round 2.828 to 2 decimal places, we could get a different answer (3.83).

Truncate 3.828 to
1 significant figure

3 ~~.828~~ — We ignore any digits after the first significant figure. So the answer is 3.

Truncate 3.828 to
3 significant figures

3.82~~8~~ — We ignore any digits after the third significant figure. So the answer is 3.82. Again notice that if we were to round this to 3 sf, the answer would be 3.83!

Truncate 0.0037281 to
3 significant figures

0.00372|81 — 0.00372

Error Intervals

If a number has been rounded, it is important to consider what possible values the exact value could have been. If we have a puppy that weighs 4kg to the nearest kg, it could actually weigh anything from 3.5kg to 4.5kg! To describe all the possible values that a rounded number could be, we use upper and lower bounds

A plant is 35cm tall, rounded to the nearest cm, what was the shortest and tallest height of the plant?

34cm | 35cm | 36cm

34.5cm | 35.5cm

As soon as we get to 0.6735, we round up to 0.674 so the largest possible value is 0.6734999

As soon as we get to 35.5, we round up to 36cm so the largest possible value is 35.4999

34.5cm < height < 35.5cm

A number was rounded to 3 decimal places to leave 0.673. What could the number be?

0.672 | 0.673 | 0.674

0.6725 | 0.6735

As soon as we get to 0.6725, we round up to 0.673 so this is the smallest possible value

As soon as we get to 0.6735, we round up to 0.674 so the largest possible value is 0.6734999

0.6725 < x < 0.6735

The speed of a train is 230 km/h truncated to 2 significant figures. What was the range for the true value of the speed?

230 | 240

Anything which starts with 23_ will be truncated to 230! — 235

230 < speed < 240

Estimating Calculations

Estimate the value of 28 x 48

If we round both to 1 sf, this gives;
30 x 50 = 1500

Therefore 28 x 48 ≈ 1500

Estimate the value of
(59.3 ÷ 12.09) + 23.4

We can approximate this sum to be (60 ÷ 12) + 20 = 25

Therefore,
(59.3 ÷ 12.09) + 23.4 ≈ 25

Estimate the value of $\frac{(4.2 \times 2.4)^2}{\sqrt{5}}$

We can estimate that (4.2 x 2.4) is approximately equal to 4 x 2 (8)

Now to deal with √5! We know that 4 is a square number and it is close to 5 so we can say that √5 is approximately equal to √4 (2).

The sum becomes $\frac{(4 \times 2)^2}{\sqrt{4}}$ =32

So $\frac{(4.2 \times 2.4)^2}{\sqrt{5}}$ ≈32

Using Error Intervals in Calculations

HIGHER TIER ONLY

A bag of peas has a mass of 700g (to the nearest 10g). Find the maximum mass of 5 bags of peas.

Maximum weight of one bag of peas:

690 | 700 | 710

695 | 705

=705g

Therefore, the maximum weight of 5 bags of peas = 5 x 705 = 3525g

A = 30 (to the nearest whole number)
B = 11.5 (to the nearest 1 decimal place)
C = 300 (to the nearest 1 significant figure)

Error Interval for A: 29.5 < A < 30.5
Error Interval for B: 11.45 < B < 11.55
Error Interval for C: 250 < C < 350

Calculate the maximum value of A + B
UB of A + UB of B : 30.5+11.55 = 42.05

Calculate the minimum value of A x C
LB of A x LB of C: 29.5 x 250 = 7375

Calculate the maximum value of C ÷ B
UB of C ÷ LB of B = 350 ÷ 11.45 = 30.7 (2dp)

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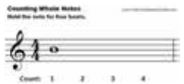
𝅝	Semibreve	4	
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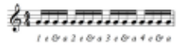
𝅘𝅥𝅯	Semiquaver	≈	

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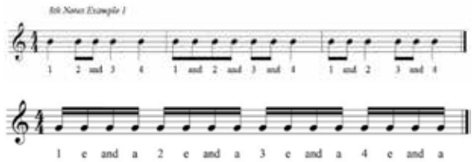

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