Heads of Maths Network Meeting
February 2nd 2022
Spring 1 meeting

Welcome

☺

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Hampshire Services
HIAS SCHOOL IMPROVEMENT

Hampshire HoDs: Date schedule
All meetings start at 1315 with approximate finish of 1600

Date	
Thursday 07-10-21	**Holiday Inn Eastleigh**
Tuesday ~~30-11-21~~ 11-01-22	**MSTeams**
Wednesday 02-02-22	**MS Teams**
Wednesday 23-03-22	**Holiday Inn Eastleigh**
Thursday 05-05-22	**Holiday Inn Eastleigh**
Tuesday 05-07-22	**MSTeams**

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Materials for Hampshire HoDs Meetings

HIAS Maths Moodle (hants.gov.uk)

Subject leaders

- Primary
- Secondary

Subject Leader Meetings 2021/22

HH2122

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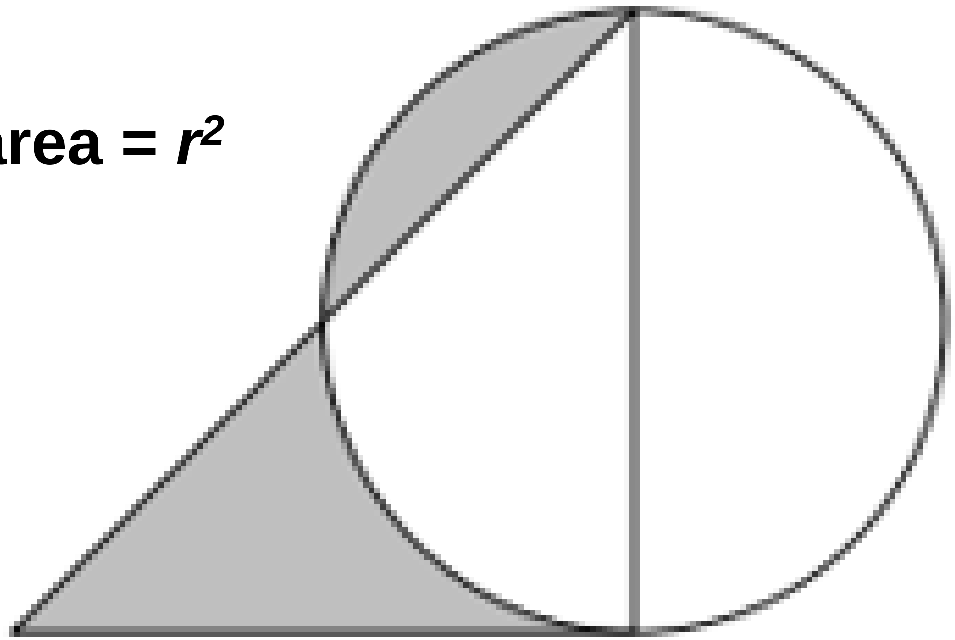
Agenda

- Subject enjoyment: Some maths to get us started
- Curriculum: Task Design: Sharing good practice with differentiation and variation.
- Teaching and learning: Scaffolding and deepening in a broad attainment class.
- Leadership: Department PD: a look at best practice using the EEF guidance on professional development EEF-Effective-Professional-Development-Guidance-Report.pdf
- Assessment: Mock exam arrangements and strategies, approaches to grade boundaries etc. Sharing good tips for revision / interventions / last minute 'make the difference' ideas.
- AOB

Shaded area = r^2

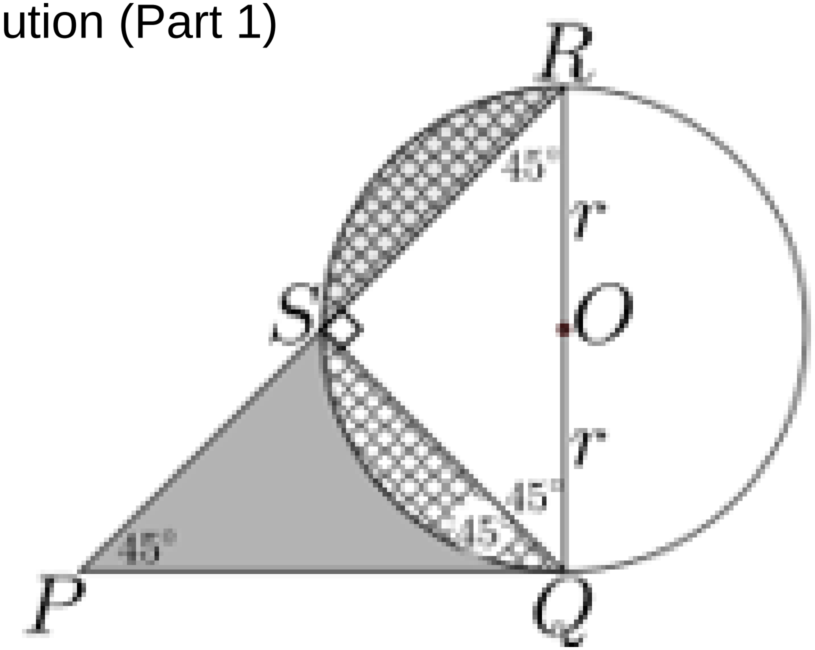


A circle of radius r and a right-angled isosceles triangle are drawn such that one of the shorter sides of the triangle is a diameter of the circle.

What is the shaded area ?

UKMT Senior Challenge 2021 Q.17

Worked Solution (Part 1)



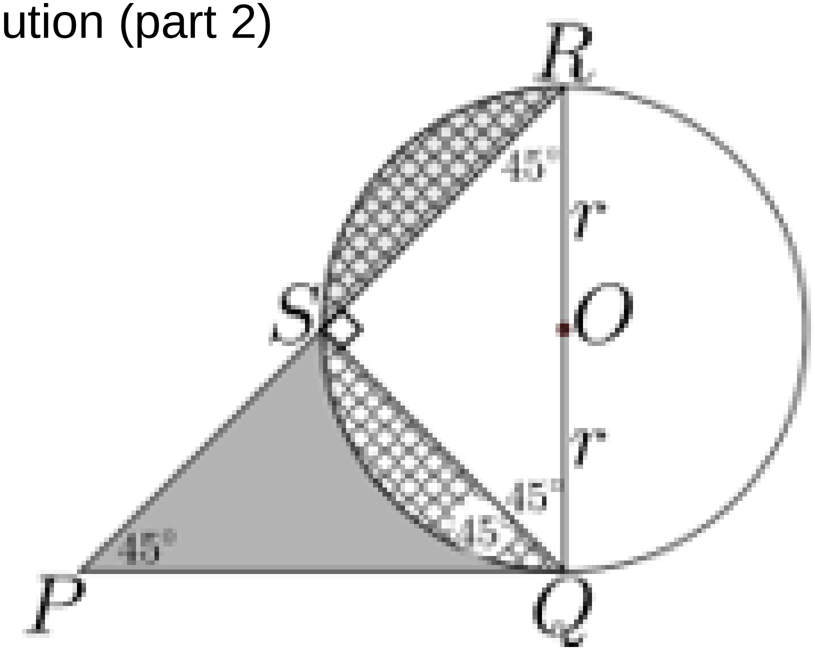
Let O be the centre of the circle and let P, Q, R and S be the points as shown in the diagram.

Because PQR is a right-angled isosceles triangle, $\angle PRQ = \angle RPQ = 45°$, and $PQ = QR = 2r$.

Because the angle in a semicircle is a right angle [this is Thales' theorem], $\angle RSQ = 90°$. Therefore, because the sum of the angles in a triangle is 180°, we have $\angle RQS = 45°$.

We therefore have $\angle SRQ = 45° = \angle SQR$. It follows that $SQ = SR$.

Worked Solution (part 2)



Because $SQ = SR$ the segments of the circle cut off by these lines, shown as hatched in the diagram, are congruent. Hence they have the same area.

It follows that the shaded area is the same as the area of the triangle PQS.

PQS is a right-angled isosceles triangle with hypotenuse PQ of length $2r$. Therefore the triangle PQS has area r^2.

Therefore the shaded area is r^2.

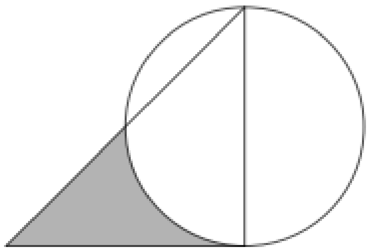
Further investigations

For investigation

17.1 Explain why from the fact that the hypotenuse of the triangle PQS has length $2r$, it follows that the area of the triangle is r^2.

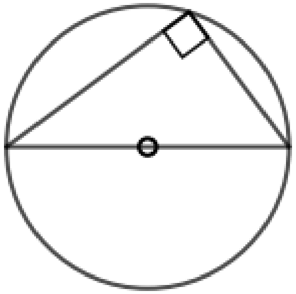
17.2 In the diagram on the right there is a circle of radius r and a right-angled isosceles triangle. One of the shorter sides of the triangle is a diameter of the circle.

What is the shaded area?



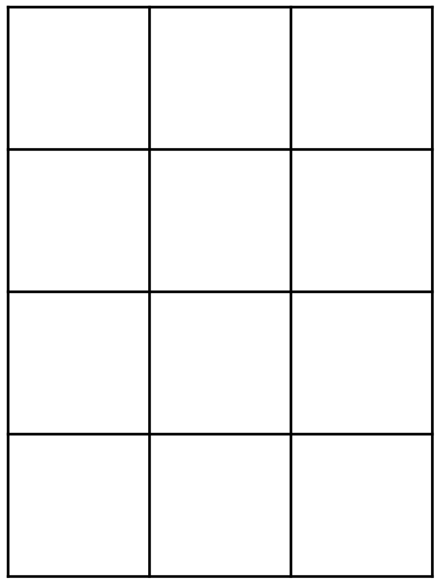
17.3 Give a proof of Thales' theorem:

The angle in a semicircle is a right angle.

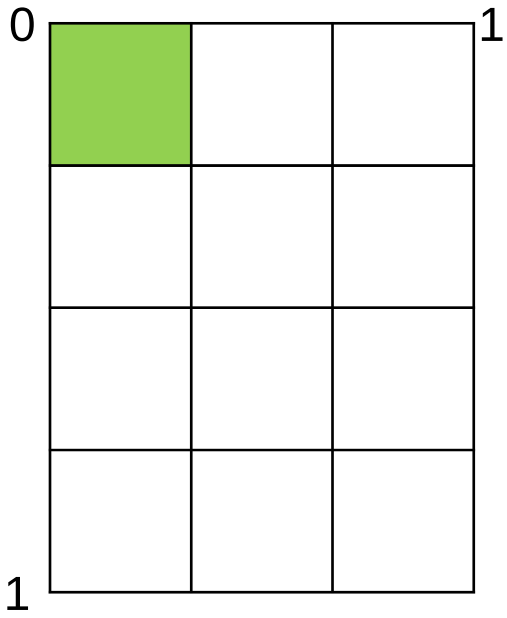


How do we teach something and then design an appropriate set of tasks to support mathematical thinking and understanding ?

This is a picture for 4 x 3:

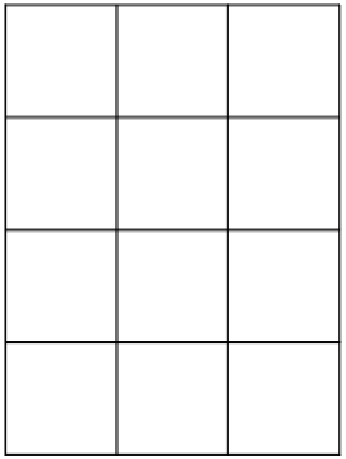


This is a picture for $\frac{1}{4}$ x $\frac{1}{3}$:



How can we use task design to get from one model to the next?

This is a picture for 4 x 3:



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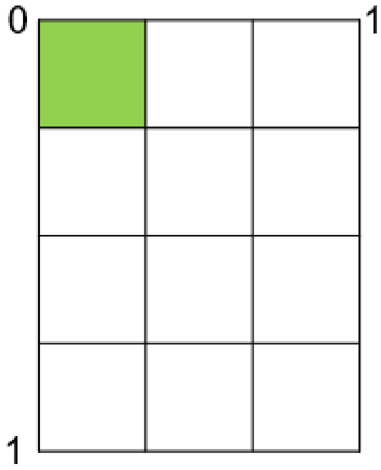
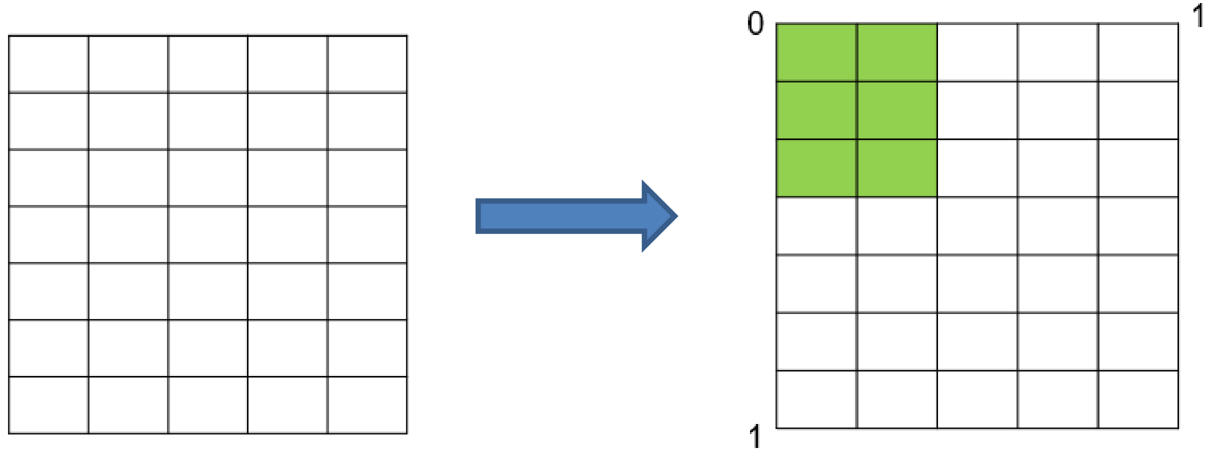


Subject Knowledge:

Teachers need to know and understand that the area model used for multiplication with whole numbers can also be used for fractions.

For example, $\frac{3}{7} \times \frac{2}{5}$ can be represented as a unit array building on the 7 x 5 array.



How do we support pupils through task design to **generalise** for any array ?

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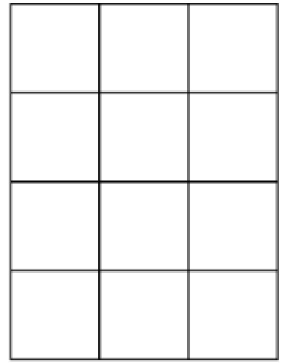
This is a picture for 4×3:



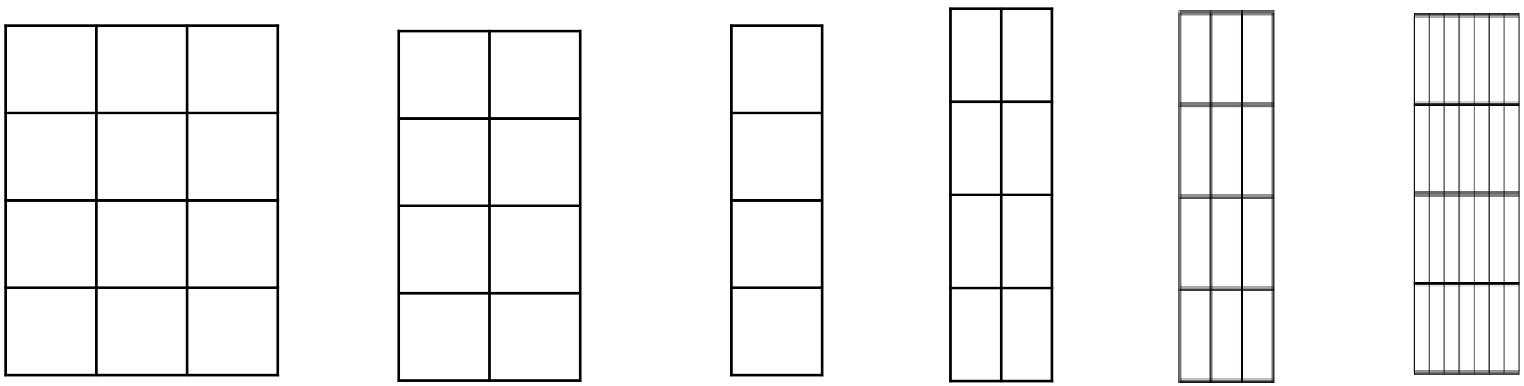
Draw a similar picture for each of these and use it to state each product.

a) 4×2 b) 4×1 c) $4 \times \frac{1}{2}$ d) $4 \times \frac{1}{3}$ e) $4 \times \frac{1}{7}$

f) 3×3 g) 2×3 h) 1×3 i) $\frac{1}{2} \times 3$ j) $\frac{1}{5} \times 3$

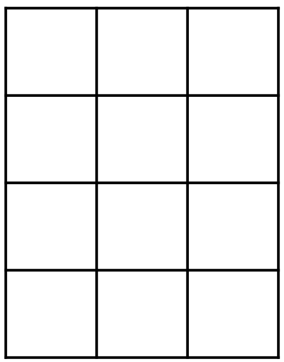
k) 1×1 l) $\frac{1}{2} \times \frac{1}{3}$ m) $\frac{1}{3} \times \frac{1}{5}$ n) $\frac{1}{7} \times \frac{1}{5}$

4×3 $\quad 4 \times 2$ $\quad 4 \times 1$ $\quad 4 \times \frac{1}{2}$ $\quad 4 \times \frac{1}{3}$ $\quad 4 \times \frac{1}{7}$

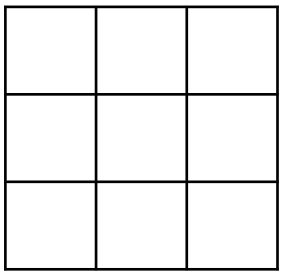


What is the same/different about this set of calculations?

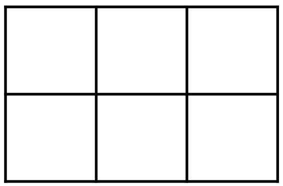
4 x 3



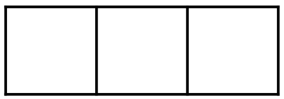
3 x 3



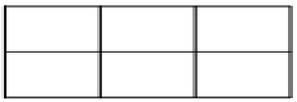
2 x 3



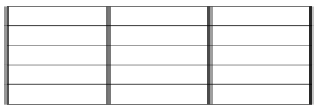
1 x 3



$\frac{1}{2}$ x 3



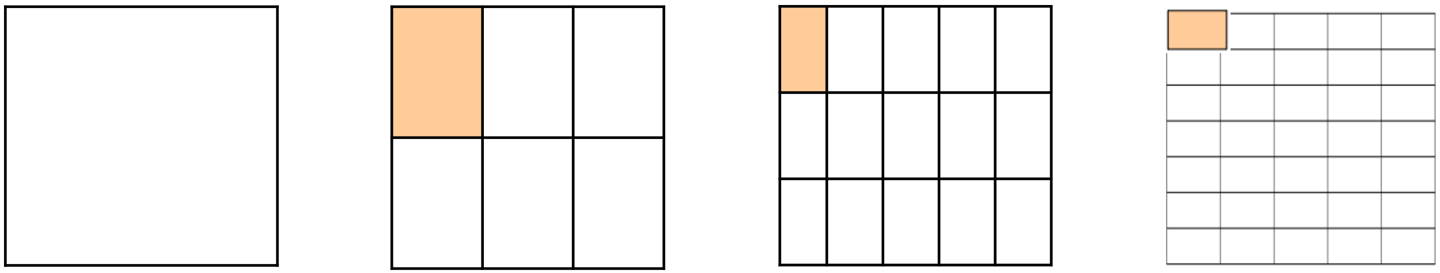
$\frac{1}{5}$ x 3



What is the same/different about this set of calculations?

How does this connect to the first set of calculations ?

1×1 $\quad \frac{1}{2} \times \frac{1}{3}$ $\quad \frac{1}{3} \times \frac{1}{5}$ $\quad \frac{1}{7} \times \frac{1}{5}$

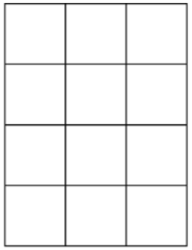


What is the same/different about this set of calculations?

How does this connect to the previous sets of calculations ?

How can this lead into multiplying non-unitary fractions ?

This is a picture for 4×3:



Draw a similar picture for each of these and use it to state each product.

a)	4×2	b)	4×1	c)	$4 \times \frac{1}{2}$	d)	$4 \times \frac{1}{3}$	e)	$4 \times \frac{1}{7}$
f)	3×3	g)	2×3	h)	1×3	i)	$\frac{1}{2} \times 3$	j)	$\frac{1}{5} \times 3$
k)	1×1	l)	$\frac{1}{2} \times \frac{1}{3}$	m)	$\frac{1}{3} \times \frac{1}{5}$	n)	$\frac{1}{7} \times \frac{1}{5}$		

What is the effect of the number choice and sequencing in this sequence of tasks?

What language will you use to support pupils' understanding of the unit square to model multiplication of fractions?

Questions count !

Suggested questioning:

What is the same/different about the first five sets of calculations?

How can you draw a picture for each one?

Which calculations 'reduce' the side of your rectangle? Why?

Why do you get sixths when you multiply halves and thirds?

Why do you get fifteenths when you multiply thirds and fifths?

My product has a denominator of 24.

What two fractions might I have multiplied together?

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Thinking about thinking and how we make connections and process

what we know, what we need to know and how to find out.

DEPARTMENT DEVELOPMENT FOCUS ?

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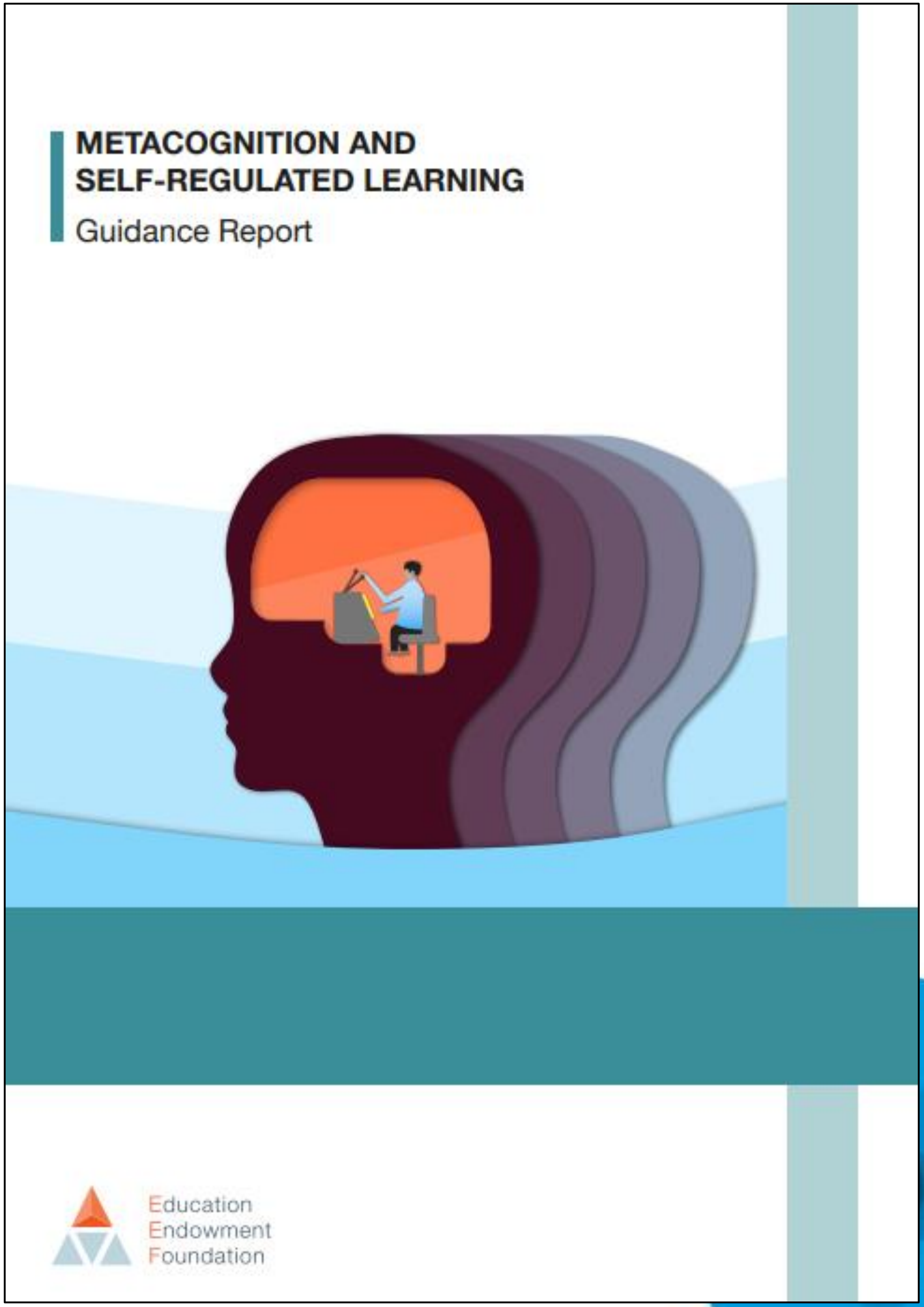
[EEF_Metacognition_and_self-regulated_learning.pdf (educationendowmentfoundation.org.uk)]



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1

Teachers should acquire the professional understanding and skills to develop their pupils' metacognitive knowledge

2

Explicitly teach pupils metacognitive strategies, including how to plan, monitor, and evaluate their learning

3

Model your own thinking to help pupils develop their metacognitive and cognitive skills

4

Set an appropriate level of challenge to develop pupils' self-regulation and metacognition

5

Promote and develop metacognitive talk in the classroom

6

Explicitly teach pupils how to organise and effectively manage their learning independently

7

Schools should support teachers to develop knowledge of these approaches and expect them to be applied appropriately

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Solve this problem and think about how you plan, monitor and evaluate
Consider

- *What is your prior knowledge*
- *What are your strategies*
- *How do you feel about proceeding once you have a plan (is it a good one?)*
- *How will you check your solution (are you sure you are correct?)*

Mason and Jasmine have £5 between them
Mason has 90p more than Jasmine
How much money does Jasmine have ?

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The ways learners monitor and purposefully direct their learning

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METACOGNITION

My knowledge of ***myself*** (my approach to maths problems); the ***task*** (what do I know about this type of problem); and ***strategies*** (different ways to solve them)

1. Planning:

" I need to think about how we have done these problems before and choose the best strategy.

..I know, I'll start by drawing a bar model

TASK:

Mason and Jasmine have £5 between them. Mason has 90p more than Jasmine. How much money does Jasmine have?

2. Monitoring:

"Has this improved my understanding of the task?

Yes, it now looks a bit like a problem I've solved before

3. Evaluation:

Drawing the bar model has moved me to the next step with this task

COGNITION

Translating the words into an equation

The mental process involved in knowing, understanding and learning

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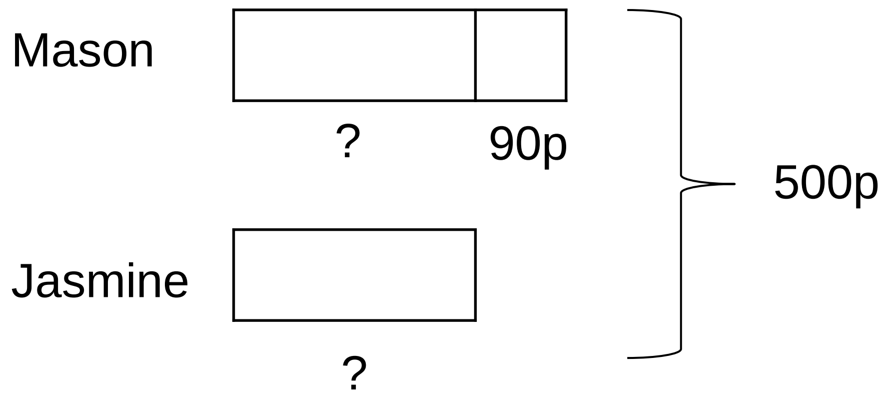
TASK:
Mason and Jasmine have £5 between them. Mason has 90p more than Jasmine. How much money does Jasmine have?



500 – 90 = 410p

410 ÷ 2 = 205p

Jasmine has £2.05
Mason has £2.95

The learner starts with *some* knowledge of the task
-word problems in maths are often solved by drawing a diagram
The learner also starts with strategies
-how to turn word problems into diagrams **(Planning)**

Cognition

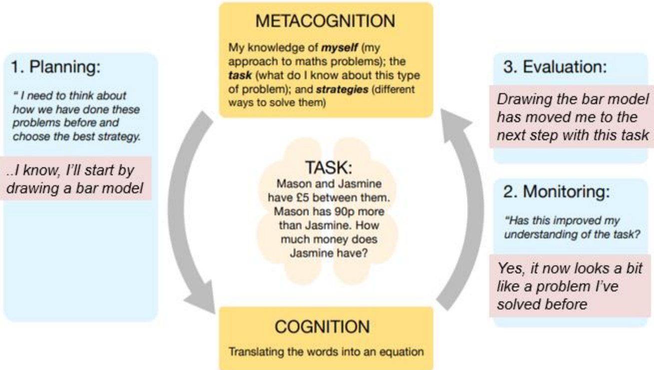
Their knowledge of the task then develops as it emerges from being a word problem into a visual diagram. **(Monitoring)**

They can then continue through this cycle if they have the strategies for solving this once the bar model is constructed

They can then evaluate overall success by substituting answers into the word problem and checking they are correct. (**Evaluation)**

If this was wrong, they can attempt other strategies and once more update their metacognitive knowledge.

Metacognition



Ensuring access and success for all

What is the scaffolded version of this task?

Which task goes before this?

Mason and Jasmine have £5 between them
Mason has 90p more than Jasmine
How much money does Jasmine have ?

Which task goes next ?

What is the greater depth version of this task?

Inclusion : How do we promote access and success for all ?

Scaffolding
'Scaffolding' is a metaphor for temporary support that is removed when it is no longer required. Initially, a teacher would provide enough support so that pupils can successfully complete tasks that they could not do independently.

This requires effective assessment to gain a precise understanding of the pupil's current capabilities. Support could be visual, verbal, or written.
The teacher will gradually remove the support (the scaffold) as the pupil becomes able to complete the task independently.

Scaffold the main task:
- **Use of part –whole models e.g. bar models and 'cherry' models to show the structure of the mathematics**
- **A model answer using a CPA approach to support learning preferences**
- **Breaking down process into smaller , more manageable steps**

Inclusion : How do we promote access and success for all ?

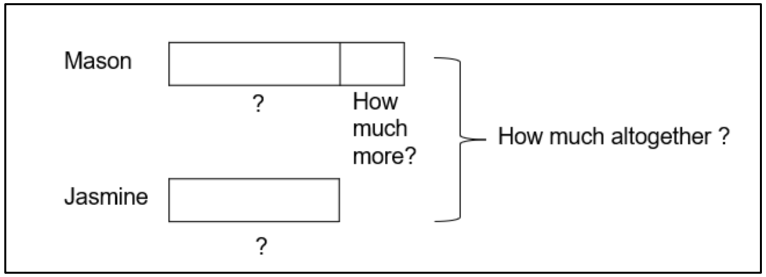
Deepening

Deepening is the way in which the teacher offers an insight into mathematical structure and connections to **develop a pupils' ability to generalise.** It is not about 'harder maths' , it is about having deep and secure foundations to your understanding so that you can not only solve the current problem, but future problems that are related to this one, seeing those relationships for yourself.

Deepen the main task:

- **Encourage a range of representations or methods to explore the structure of the mathematics**
- **Connect to other areas of mathematics**
- **Explore alternative versions of the same problem to see it from different perspectives**
- **Ask insightful questions to develop 'noticing' and 'wondering'**

Ensuring access and success for all



Mason and Jasmine have £5 between them. Mason has £1 more than Jasmine. How much money does Jasmin have?

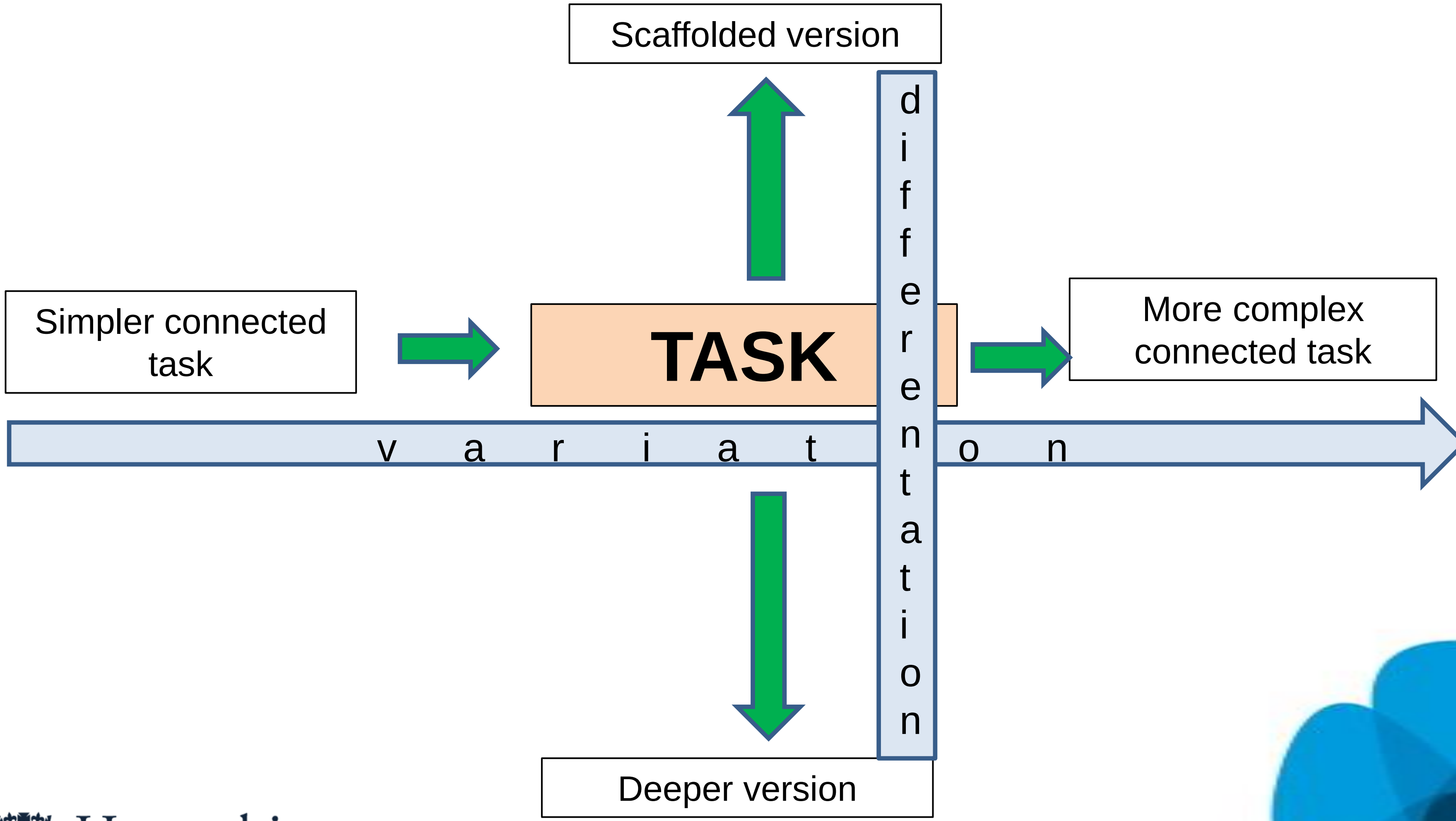
Mason and Jasmine have £5 between them
Mason has 90p more than Jasmine
How much money does Jasmine have ?

Mason and Jasmine have £5 between them. Mason has £1.35 more than Jasmine. How much money does Jasmine have? Solve this with a diagram and with an equation.

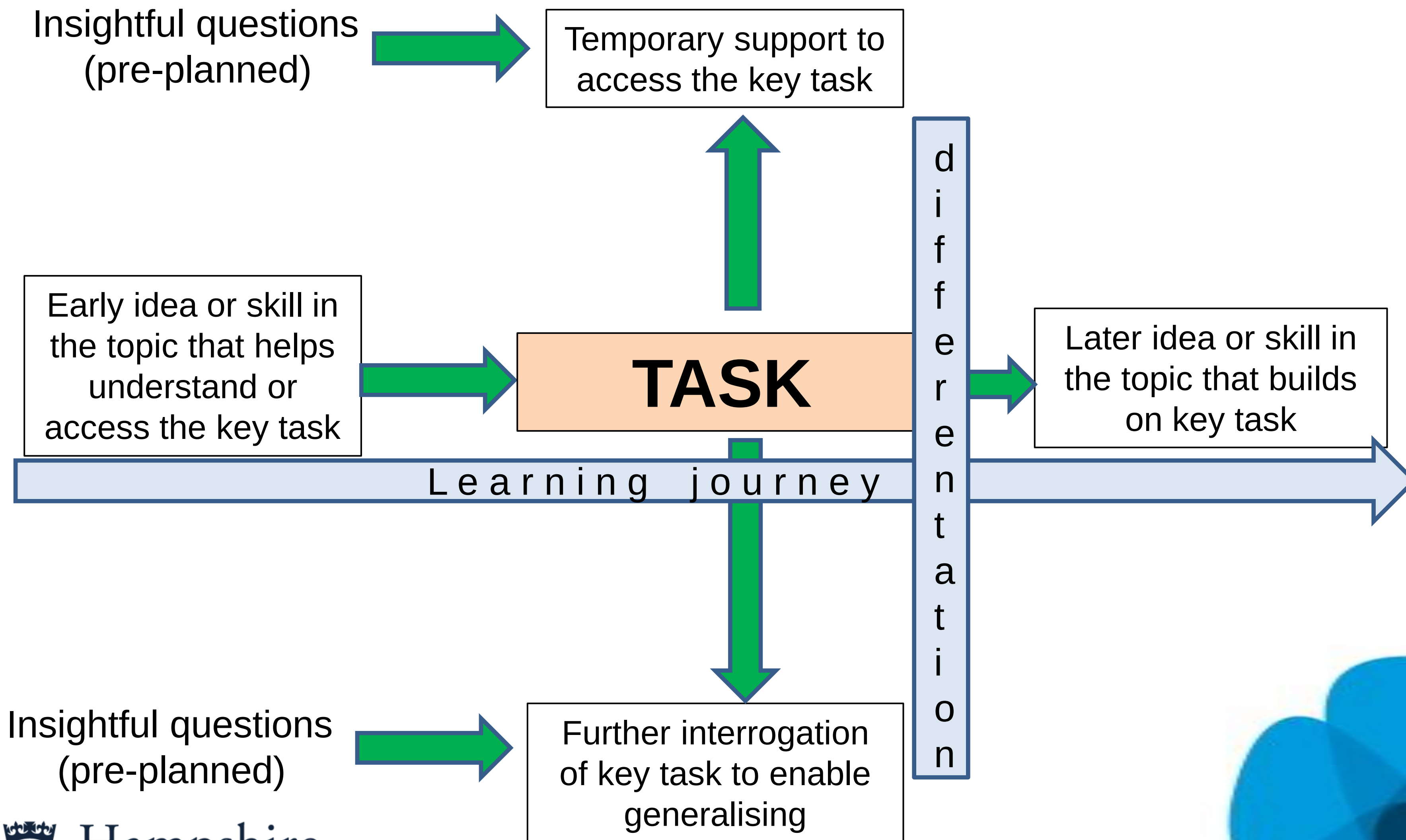
Mason, Jasmine and Kerry have £5 between them.
Mason has 90p more than Jasmine.
Kerry has twice as much as Jasmine
How much money does Jasmine have ?

Trial and Improvement to diagrams to equations

Ensuring access and success for all



Ensuring access and success for all



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The volume of sphere is given by $V = kr^3$.
Find k when $V=2304\pi$ cm^3 and r=12cm

Scaffold

Scaffold

The surface of a sphere is directly proportional to the square of its radius. When SA=144π cm^3 , r=6cm Find the equation for the surface area of the sphere in terms of its radius

The volume of a sphere is directly proportional to the cube of its radius. When V=2304π cm^3 , r=12cm Find the equation for the volume of the sphere in terms of its radius

Find the volume of a sphere of radius 2.63cm in terms of π

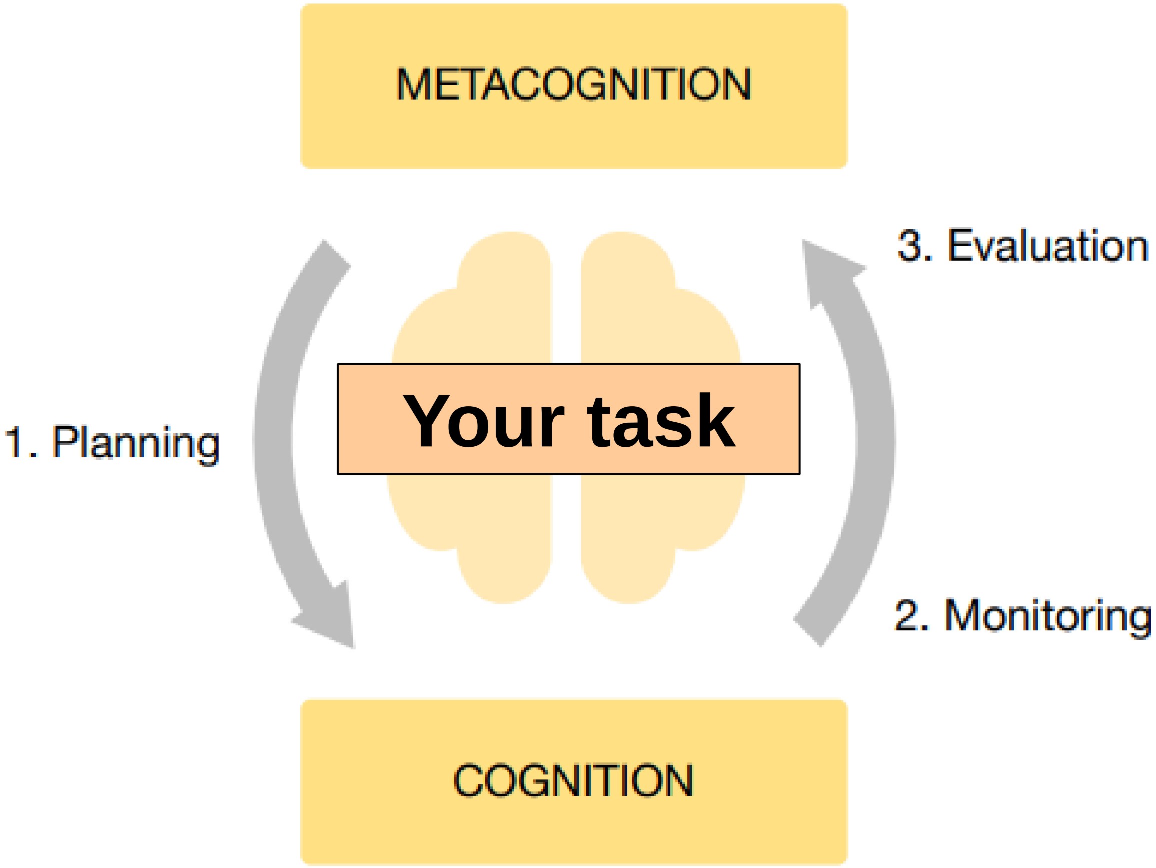
Find the radius of a sphere of volume 1000 cm^3 , correct to 1 dp.

Deeper

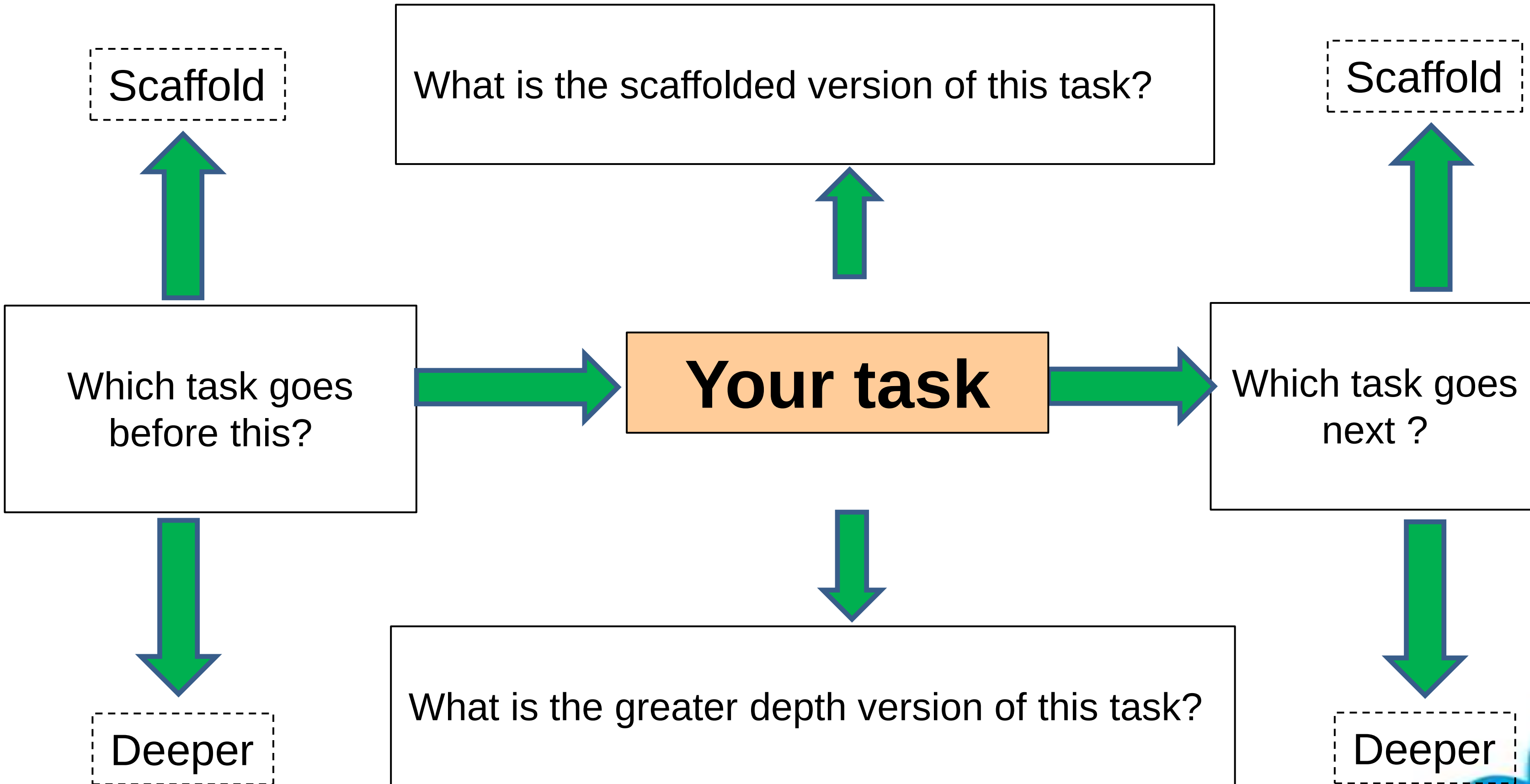
The volume of a sphere is given as 2304π cm^3
This varies in direct proportion to the cube of its radius. The diameter of this sphere is 24cm.
Use this information to find the volume of a similar sphere with a diameter of 28cm.

Deeper

Task:
Select or create a task for the unit you are currently teaching
Solve your task and consider what you want to teach and how.



Task: Wrap the access tasks around your task



This is your learning journey

Sharing good practice with task design

SKILL

1) Find $\frac{1}{4}$ of 28

2) Find $\frac{1}{3}$ of 27

3) Find $\frac{1}{6}$ of 42

4) Find $\frac{1}{5}$ of 22

5) Find $\frac{4}{5}$ of 30

6) Find $\frac{5}{7}$ of 42

7) Find $\frac{4}{11}$ of 55

8) Find $\frac{3}{10}$ of 25

9) Find $\frac{2}{5}$ of 12

STRENGTHEN

Fill in the blanks

(a) $\frac{\square}{5}$ of $25 = 10$ (b) $\frac{\square}{8}$ of $40 = 15$

(c) $\frac{\square}{9}$ of $36 = 8$ (d) $\frac{5}{\square}$ of $24 = 20$

Fill in the blanks. Give your fractions in their simplest form.

(a) $\frac{\square}{\square}$ of $20 = 8$ (b) $\frac{\square}{\square}$ of $30 = 6$

(c) $\frac{\square}{\square}$ of $50 = 24$ (d) $\frac{\square}{\square}$ of $12 = 9$

Fill in the blanks. Suggest two possible answers for each statement.

(a) $\frac{5}{6}$ of $\square = \square$

(b) $\frac{2}{7}$ of $\square = \square$

CHALLENGE

1) There are 194 students in a primary school. Mr Wallace says that exactly $\frac{1}{4}$ of the students are left handed. Explain why Mr Wallace must be wrong.

2) The size of a jar of coffee is increased by one-fifth. The new size is later reduced by one-fifth. Is the new jar smaller, the same size or larger than the original? Explain how you worked out your answer.

3) When a bouncy ball is dropped it will rise to $\frac{4}{5}$ of the height it dropped from. A ball is dropped from a height of 5 metres and is allowed to bounce repeatedly. Which is the least number of bounces until its rebound height is less than 2 metres?

4)

How many ways can you complete this calculation?

$\frac{\square}{\square}$ of $\square\square = \square\square$

★ Use any digits

★★ Use each digit only once

What are the largest & smallest results you can make?

Y7 mastery curriculum at Perins

Task Design

What works well for your department ?

Time for personal reflection and a 10 minute break

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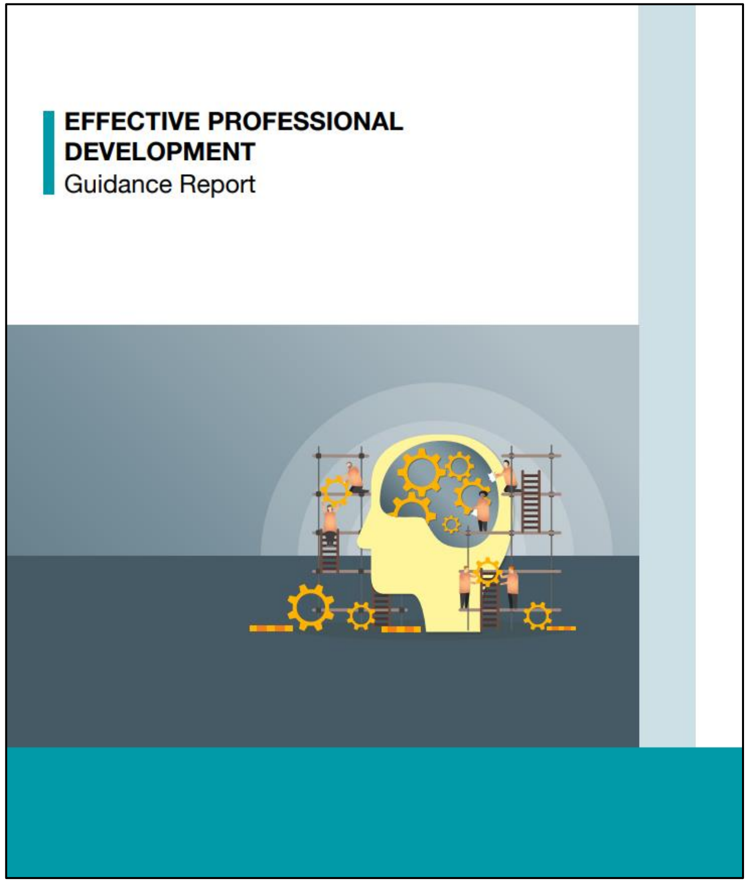

[EEF-Effective-Professional-Development-Guidance-Report.pdf]

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What do we mean by ‘Professional Development ?

‘PD’ may take a variety of different meanings in different contexts.

This report defines teacher PD as a structured, facilitated activity for teachers intended to increase their **teaching ability.**

The emphasis on teaching ability is key

The focus on teaching ability rather than SK is intended to include a broad range of skills:

- Communicating and modelling
- Exploring ideas
- Instruction
- Assessment

This definition perceives PD as structured activities aiming to improve outcomes in classrooms rather than updates, briefings and ‘how to use this equipment or programme’ type training.

What do we mean by ‘Professional Development ?

Think of examples of what PD *is* and what it *is not*.

PD *is*…….	**PD *is not* …….**
School-wide, monthly twilight sessions on how to improve formative assessment in the classroom	A briefing provided to practitioners on how to use new smartboards
A training day provided by an in-school expert on how to use strategies to improve pupils’ subject specific language	An information session for teachers on the new school admissions code
A series of webinars delivered by an external provider on how to improve behaviour management in the classroom	Teachers receiving a new curriculum programme via email, complete with schemes of work and assessment materials

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1

When designing and selecting professional development, focus on the mechanisms.

2

Ensure that professional development effectively builds knowledge, motivates staff, develops teaching techniques, and embeds practice.

3

Implement professional development programmes with care, taking into consideration the context and needs of the school.

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1

When designing and selecting professional development, focus on the mechanisms.

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The importance of mechanisms

A key finding of the review underpinning this guidance was that the more mechanisms a PD programme had, the greater the impact on pupil attainment. The more 'building blocks' incorporated, the better the chance of success.

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A BUILDING KNOWLEDGE

1. Managing cognitive load
2. Revisiting prior learning

B MOTIVATING TEACHERS

3. Setting and agreeing on goals
4. Presenting information from a credible source
5. Providing affirmation and reinforcement after progress

C DEVELOPING TEACHING TECHNIQUES

6. Instructing teachers on how to perform a technique
7. Arranging social support
8. Modelling the technique
9. Monitoring and providing feedback
10. Rehearsing the technique

D EMBEDDING PRACTICE

11. Providing prompts and cues
12. Prompting action planning
13. Encouraging monitoring
14. Prompting context-specific repetition

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A. BUILD KNOWLEDGE
B. MOTIVATE TEACHERS
C. DEVELOP TEACHING TECHNIQUES
D. EMBED PRACTICE

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A. BUILD KNOWLEDGE

When designing and delivering PD, it is likely to be important to present new knowledge in ways that support understanding. As any teacher would with their own class, PD facilitators must pay close attention to how they structure and build the knowledge taught through the programme. Specifically, two mechanisms that are likely to improve PD are (1) managing cognitive load and (2) revisiting prior learning.

Mechanism 1: Managing cognitive load

When presenting new information as part of professional development—when teaching teachers new knowledge—careful thought should be applied to managing the cognitive load of participants. To avoid 'overloading' participants, programme developers and deliverers should either:

- remove less relevant content;
- focus only on the most relevant content;
- vary their presentation via the use of multiple examples; or
- employ strategies such as dual coding—the combination of verbal and visual instruction.

These strategies will support in managing the cognitive load of the participant.

Mechanism 2: Revisiting prior learning

Another important consideration when structuring the knowledge taught to teachers in PD is the relationship with previous and future learning. PD is more likely to be effective where designers:

- revisit previous topics or techniques later in the programme;
- quiz participants on information provided in past sessions; or
- use tasks that require teachers to draw on past learning.

This draws upon research relating to retrieval practice, which theorises that recalling information makes it more likely that the learner will retain the learning.

'Drip Feed' Approach

'Spiral curriculum' Revisit and Review Build up

A. BUILD KNOWLEDGE
B. MOTIVATE TEACHERS
C. DEVELOP TEACHING TECHNIQUES
D. EMBED PRACTICE

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B. MOTIVATE TEACHERS

Once teachers have built knowledge (using a method that manages cognitive load and revisits prior learning), they still need to be motivated to act upon that knowledge, and that is where three mechanisms may be used:

- setting and agreeing on goals;
- presenting information from a credible source; and
- providing affirmation and reinforcement after progress.

Mechanism 3: Setting and agreeing on goals

Across a variety of behaviours, reviews have demonstrated that setting goals substantially increases the likelihood of behaviour change.[21] When conscious, specific, and sufficiently difficult goals are set, they make it more likely that performance will improve.[22] It may therefore be fruitful for professional development facilitators to set or agree upon specific goals for teachers to act on.

Goals increase the likelihood of fulfilment

Mechanism 4: Presenting information from a credible source

Where information is derived from impacts how motivated teachers are to use it. The more credible the source, the more likely they are to change their practice.[23] PD facilitators should, therefore, think carefully about how they present and make the case for a particular change in teacher practice. Useful methods that make teachers more likely to follow suit may include:

- supporting a suggestion with published and robust research;
- featuring a prominent education academic to advocate for a change; or
- using an expert teacher to promote a particular practice.

Participants have to believe and value the message

Mechanism 5: Providing affirmation and reinforcement after progress

Providing affirmation and reinforcement after a teacher has made an effort to alter practice—or shown progress in performing a new skill—may improve teachers' motivation to act upon professional development. This should come after the change has been attempted (rather than before).[25]

Participants have to feel that their efforts are valued

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Reflection:

Think about a PD session or programme that you have designed, selected or participated in

- Can you identify whether any of the mechanisms we have looked at were present ?
- Can you identify where a mechanism could have been used to improve the PD?

Next meeting: A focus on C (Developing teaching techniques) and D (Embed practice) and the opportunity to plan a department PD session

GCSE arrangements and updates

Foundation Tier Formulae Sheet

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Taken from OCR website Nov2021

Perimeter, Area and Volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

Area of a trapezium $= \frac{1}{2}(a+b)h$

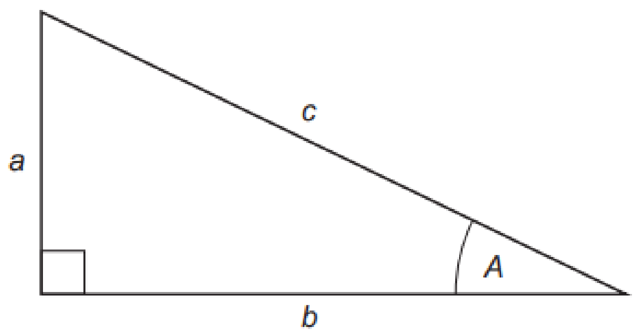
Volume of a prism $=$ area of cross section $\times$ length

Where r is the radius and d is the diameter:

Circumference of a circle $= 2\pi r = \pi d$

Area of a circle $= \pi r^2$

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

$$a^2 + b^2 = c^2$$

In any right-angled triangle ABC where a, b and c are the length of the sides and c is the hypotenuse:

$$\sin A = \frac{a}{c} \qquad \cos A = \frac{b}{c} \qquad \tan A = \frac{a}{b}$$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is the number of times that the interest is compounded:

Total accrued $= P\left(1 + \frac{r}{100}\right)^n$

Probability

Where $\mathrm{P}(A)$ is the probability of outcome A and $\mathrm{P}(B)$ is the probability of outcome B:

$$\mathrm{P}(A \text{ or } B) = \mathrm{P}(A) + \mathrm{P}(B) - \mathrm{P}(A \text{ and } B)$$

Higher Tier Formulae Sheet

Taken from OCR website Nov2021

Perimeter, Area and Volume

Where a and b are the lengths of the parallel sides and h is their perpendicular separation:

Area of a trapezium $= \frac{1}{2}(a+b)h$

Volume of a prism $=$ area of cross section $\times$ length

Where r is the radius and d is the diameter:

Circumference of a circle $= 2\pi r = \pi d$

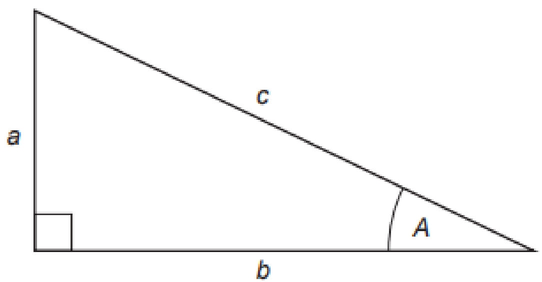
Area of a circle $= \pi r^2$

The Quadratic Formula

The solutions of $ax^2 + bx + c = 0$ where $a \neq 0$

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Pythagoras' Theorem and Trigonometry



In any right-angled triangle where a, b and c are the length of the sides and c is the hypotenuse:

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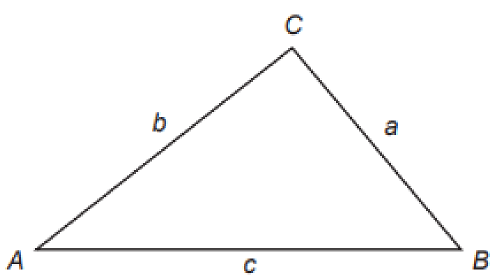

In any triangle ABC where a, b and c are the length of the sides:

sine rule: $\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$

cosine rule: $a^2 = b^2 + c^2 - 2bc\cos A$

Area of triangle $= \frac{1}{2}ab\sin C$

Compound Interest

Where P is the principal amount, r is the interest rate over a given period and n is the number of times that the interest is compounded:

Total accrued $= P\left(1 + \frac{r}{100}\right)^n$

Probability

Where $\mathrm{P}(A)$ is the probability of outcome A and $\mathrm{P}(B)$ is the probability of outcome B:

$\mathrm{P}(A \text{ or } B) = \mathrm{P}(A) + \mathrm{P}(B) - \mathrm{P}(A \text{ and } B)$

$\mathrm{P}(A \text{ and } B) = \mathrm{P}(A \text{ given } B)\mathrm{P}(B)$

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Advance information

To make exams in 2022 less daunting students will be told in advance some of the content that will or won't be on the exam papers, helping them to manage their exam preparation. This information will be issued in the spring term to help students to focus their revision time.

However, the DfE have confirmed that if the impact of the pandemic worsens, it could be issued earlier in the academic year. We will update you on the timing of the advance information release once this has been confirmed.

Date is still 7th Feb 2022

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Revision and final curriculum provision for Year 11

What are your plans ?

Mock exam arrangements and strategies, approaches to grade boundaries etc.

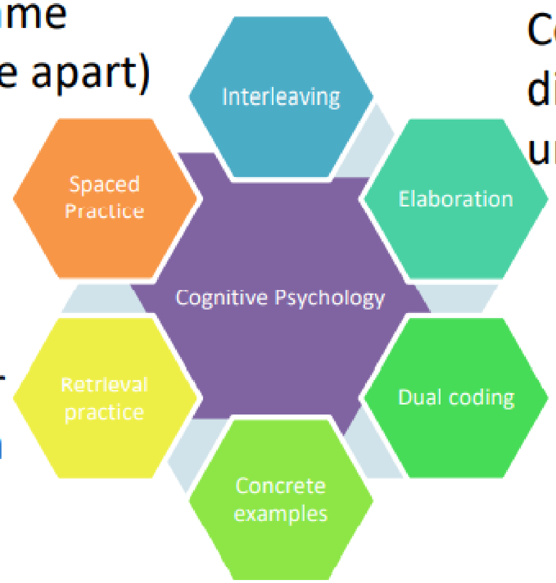
Sharing good tips for revision / interventions / last minute ‘make the difference’ ideas.

Cognitive strategies to support embedding K&U

Tasks that contain a variety of different maths topics

Tasks that expose students to the same information at different times (space apart)

Coding the same information in different ways to deepen the understanding of structure

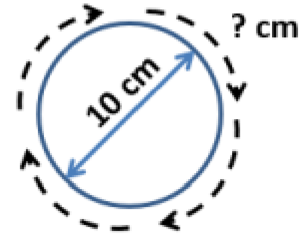


Tasks that offer the opportunity for students to recall information from long-term memory

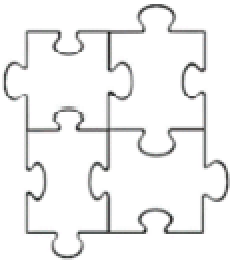
Verbal and visual representations to prompt thinking and memory

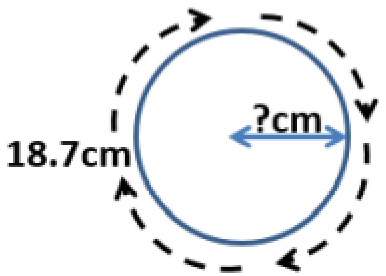
Real-life or relevant contexts for a piece of mathematics

$\pi = \square.1415926......$



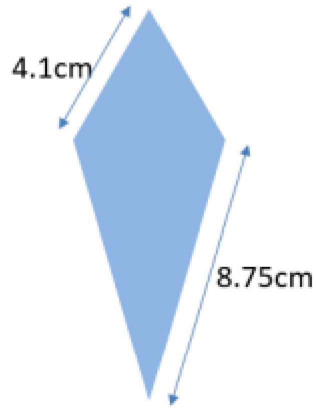
Write down the value of the circumference.
Give your answer to 3 sig.figs



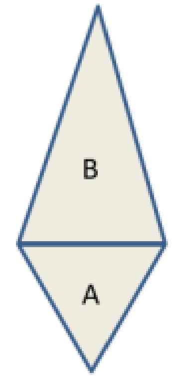


Calculate the value of the radius.
Give your answer to 4 dps.

The diameter of a circle is given as 'd'
What is the area of this circle ?



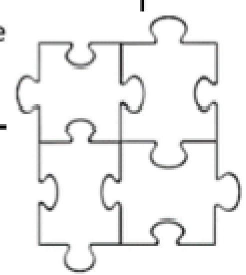
Calculate the perimeter of this kite

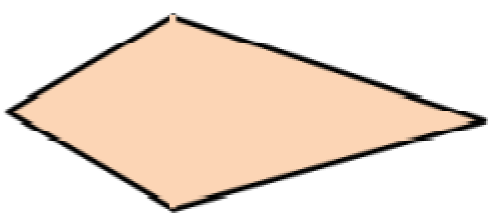


Area A is $\frac{1}{3}$ Area B

Area A = 1.7m^2

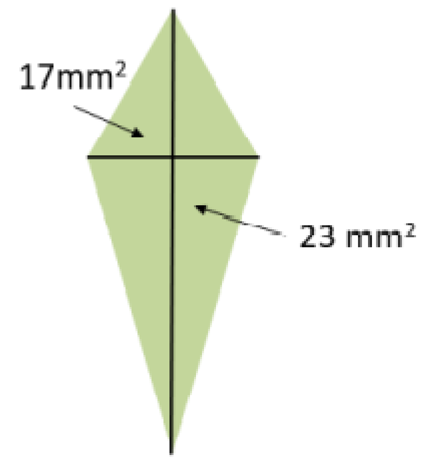
What is the area of the kite ?



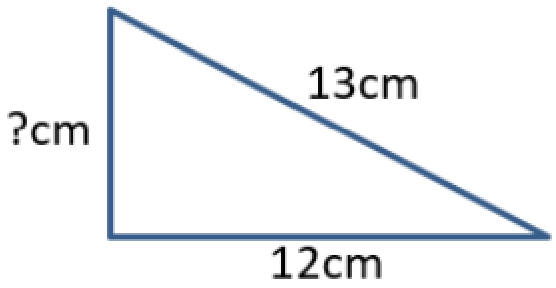


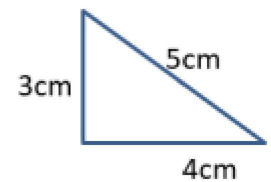
The perimeter of this kite is 50 mm.

What could the side lengths be?



Calculate the area of this kite





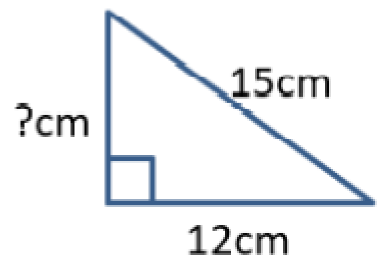
(3,4,5) is a Pythagorean triple

(x , 28 , 35)
is also a Pythagorean triple

Calculate x

$a^2 = 289$

$a = ?$



Find the area of this triangle

Next Meeting : Holiday Inn, Eastleigh
Wednesday 23rd March 2022 : 1315 start
Remember to register your car reg when you go in !

Focus on PD and task design for a mixed attainment (or broad attainment) class, thinking about cognition and metacognition, variation, access and success for all.

Please be ready to share in groups:
One or more tasks that have worked well in the classroom
A department PD session that has had an impact on practice

Tasks can be:
extended investigations
a sequence of connected shorter problems
recall and retrieval tasks
or……?

We will spend part of the afternoon discussing and developing the ideas around good quality task and PD design

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A.O.B

Next Meeting
Holiday Inn Eastleigh
1315 start
Wednesday 23rd March 2022
Look forward to seeing you all there

Please let me know if there is anything you would like to address at that meeting and I will add it to the agenda.

(email me at jo.lees@hants.gov.uk)

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