

# Deepening Understanding

## DAB Reasoning Insight



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Decide – Assess – Back it up

# What does it all mean?

At DU, we wanted a child-friendly acronym to support children with their responses to reasoning-related questions across the curriculum. That's why we developed our 'DAB' philosophy. Since 2015, 'dabbing' has become widely recognised by children as a gesture of triumph and to motivate pupils, we endorsed this as we believe excellent reasoning is deserving of celebration. Our DAB philosophy can be broken down into three simple steps to form a 'coherent' response:

- D** – Decide (on the answer)
- A** – Assess (explain)
- B** – Back it up (with evidence and / or visuals)

# Decide

Deciding is as simple as providing a choice about a reasoning-related question.  
Expected decisions may include...

- The statement is true / false
- [Character name] is correct / incorrect
- The statement is always / sometimes / never true
- [Insert example] is the odd one out
- There is a mistake
- There is a similarity / difference

# Assess

Assessing is where children begin to conjecture. Sometimes, the wording of reasoning-related questions can be recycled within this response. During the assess stage, pupils should not give any 'concrete' evidence to demonstrate their understanding. Assessment examples include...

- Two-eighths of 24 is equal to 6
- A cube does not have six vertices
- The interior angles of regular shapes are equal
- The product of 2.5 and 1,000 is a 4-digit number
- 2,983,273 does not have eight hundred thousands
- Both numbers have three factors

# Back it up

'Back is up' is where pupils should be encouraged to provide evidence that supports the justification of their decisions and assessments. Responses should provide a range of abstract and pictorial representations to demonstrate their understanding. The most able of pupils should be encouraged to respond in multiple ways as a means of convincing. Evidence may include...

- Formal written methods
- Representations such as part-whole models, place value charts, Gattegno charts, place value counters, base 10, tens frames, number lines, bar models etc...

# Examples

## REASONING 2

True or False?

A one and three quarter turn is equal to  $530^\circ$

Prove it!

### Modelled DAB Reasoning Response

**D** – The statement is false.

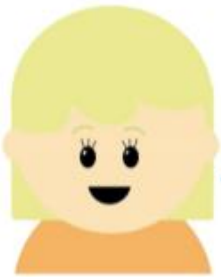
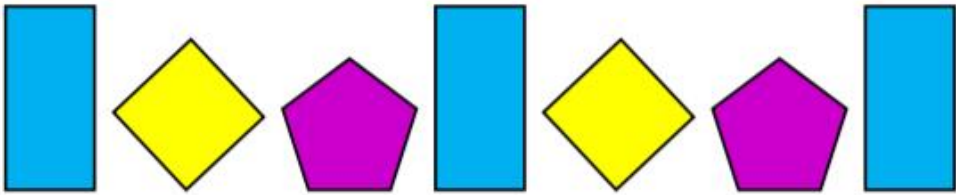
**A** – A one and three quarter turn is not equal to  $530^\circ$ .

**B** – A full turn is equal to  $360^\circ$ . A three quarter turn =  $(360^\circ \div 4) \times 3$  or  $3 \times 90^\circ$  which is  $270^\circ$ . A one and three quarter turn =  $360^\circ + 270^\circ = 630^\circ$ .

# Examples

## REASONING 2

Jane is describing the pattern.



The pattern is rectangle, triangle, pentagon, rectangle, square, pentagon...

Do you agree with her? Explain your reasoning!

### Reasoning 2

#### Modelled DAB Reasoning Response

**D** – I do not agree with Jane.

**A** – There is not a triangle in the pattern.

**B** – The second shape is a square. The repeating pattern should be rectangle, square, pentagon.

# Examples

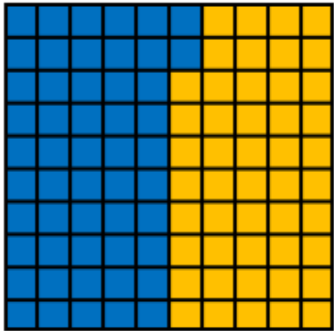
## Reasoning 2

### Modelled DAB Reasoning Response

**D** – Alfie is wrong

**A** – Adding £0.58 to 52p will not make a whole (£1).


**B** – He needs to add £0.48 to make a whole.




$$0.52 + 0.48 = 1$$

**REASONING 2**

Alfie says...



I need to add £0.58 to make a whole.



Explain why he is wrong.



# Examples

## REASONING 1

Spot Millie's mistake



$$\frac{5}{8} \text{ of } 40 = 5$$

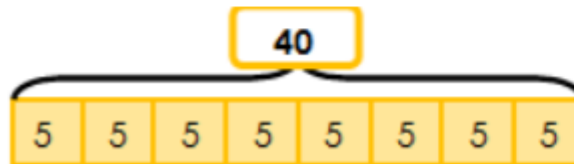
### Reasoning 1

#### Modelled DAB Reasoning Responses

**D** – Millie has made a mistake

**A** – She has not found  $\frac{5}{8}$  of 40, she has only found  $\frac{1}{8}$  of 40

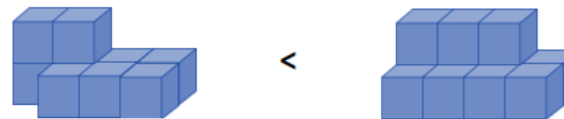
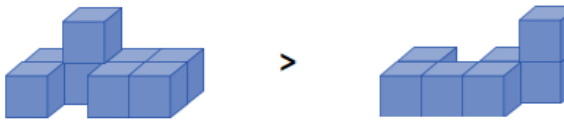
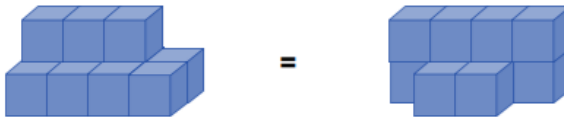
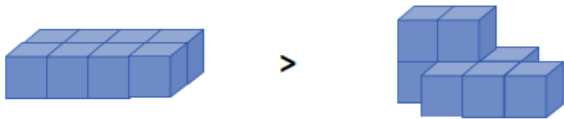
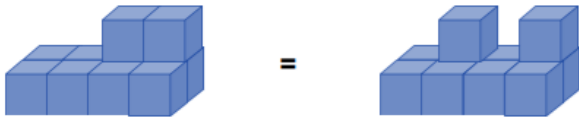
**B** – 40 is the whole and the fraction is 5 eighths.  $40 \div 8 = 5$  so 5 eighths =  $5 \times 5$  which is 25.



# Examples

## REASONING 1

Identify and explain the mistakes!

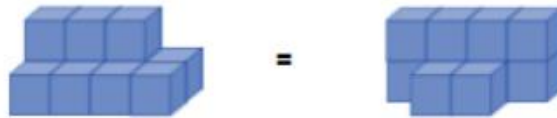


## Reasoning 1

### Modelled DAB Reasoning Responses

**D** – There are 2 mistakes.

**A** – These comparisons are incorrect:



**B** – In the first error, both shapes have a volume of  $8\text{cm}^3$  so they should be compared with the = symbol.

In the second error, the shape on the left has a volume of  $11\text{cm}^3$  and the shape on the right has a volume of  $10\text{cm}^3$  so they should be compared with the > symbol.

# Application Beyond Maths

Our DAB approach to reasoning is not limited to maths: it can be applied into other subject areas. Let's look at an example where DAB has been used in grammar!

## REASONING 1

Always, Sometimes or Never?

To use apostrophes for contraction, you just need to omit one letter from the second word and put an apostrophe in its place.

Convince me!

## Reasoning 1

### Modelled DAB Reasoning Responses

**D** – Sometimes

**A** – To use apostrophes for contraction, you sometimes need to remove one letter from the second word and put an apostrophe in its place but sometimes it is more than one letter that is removed.

**B** – To contract 'I am', you remove the 'a' and add an apostrophe to make I'm. To contract 'he would', you remove 'woul' and add an apostrophe to make he'd.

# Our Resources

At DU, all of our resources come with modelled reasoning responses in line with our DAB philosophy and this makes it easy for our users to 'teach' reasoning within the classroom. Where our materials are fully embedded across a school, users are reporting the positive impact they are having on the depth of their reasoning.

Our DAB approach is also widely complimented for being suitable for the needs of all learners, with those of a greater depth having the ability to remove the structure once comprehensive responses have been witnessed. Greater depth pupils are able to draw upon a vast range of evidence as they shape even more convincing responses.

## Samples / Further Information

If you would like to trial a specific DU resource in your teaching, with a view to subscribing, please give us details of what is coming next in your teaching sequence and we will be able to send you something to trial.

Requests can be made using [help@deepeningunderstanding.co.uk](mailto:help@deepeningunderstanding.co.uk)

If you would like to see our competitive pricing, the full range of packages we offer schools can be viewed on our website:

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