

Number Sense Workshop Two

Key messages

Number sense is about having a competency with numbers that is based on understanding rather than reliant on memorisation or algorithms

Number sense can be taught and developed with all pupils in the class

Carefully crafted number talks are a powerful teaching and learning strategy to develop number sense

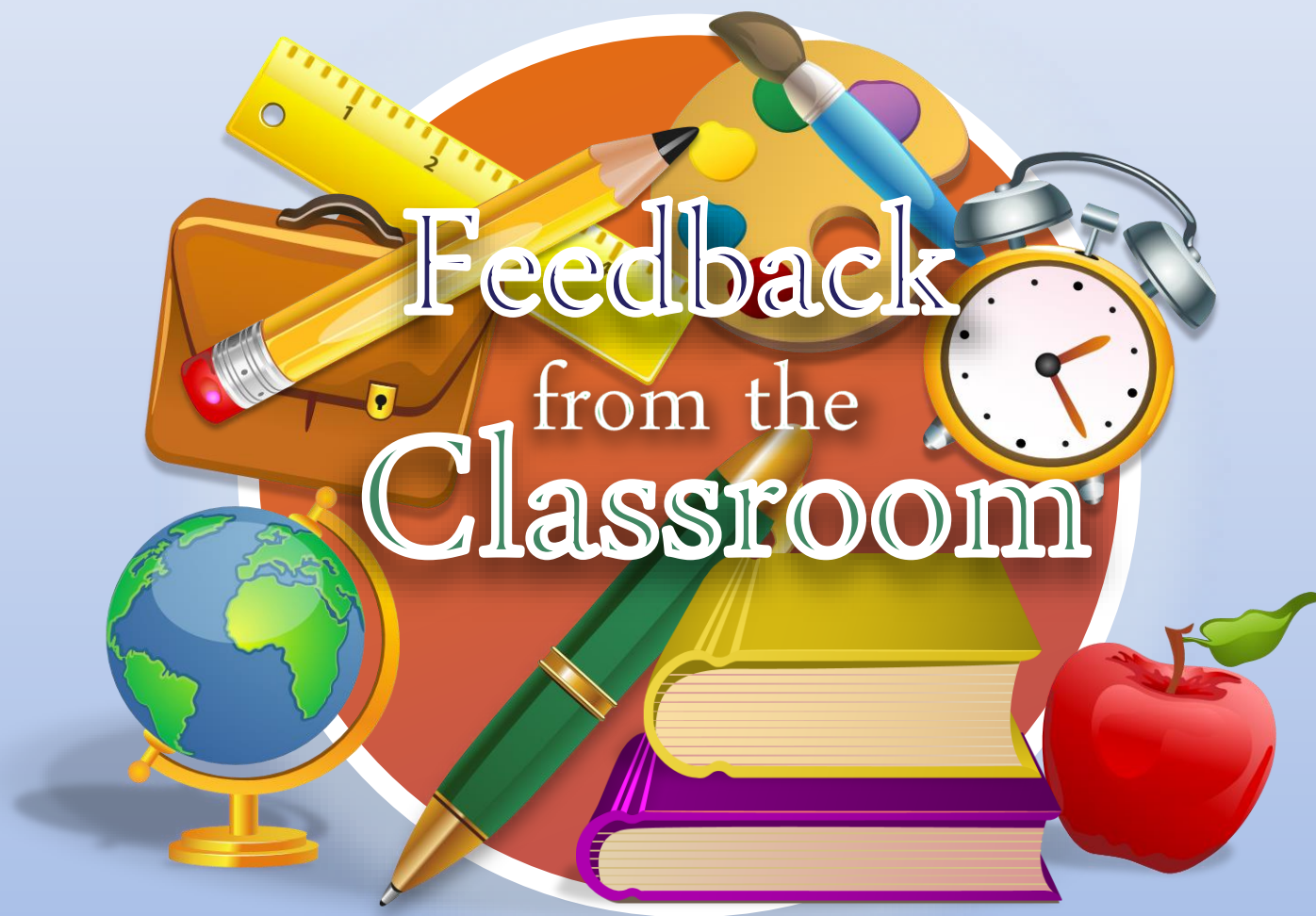
Overview

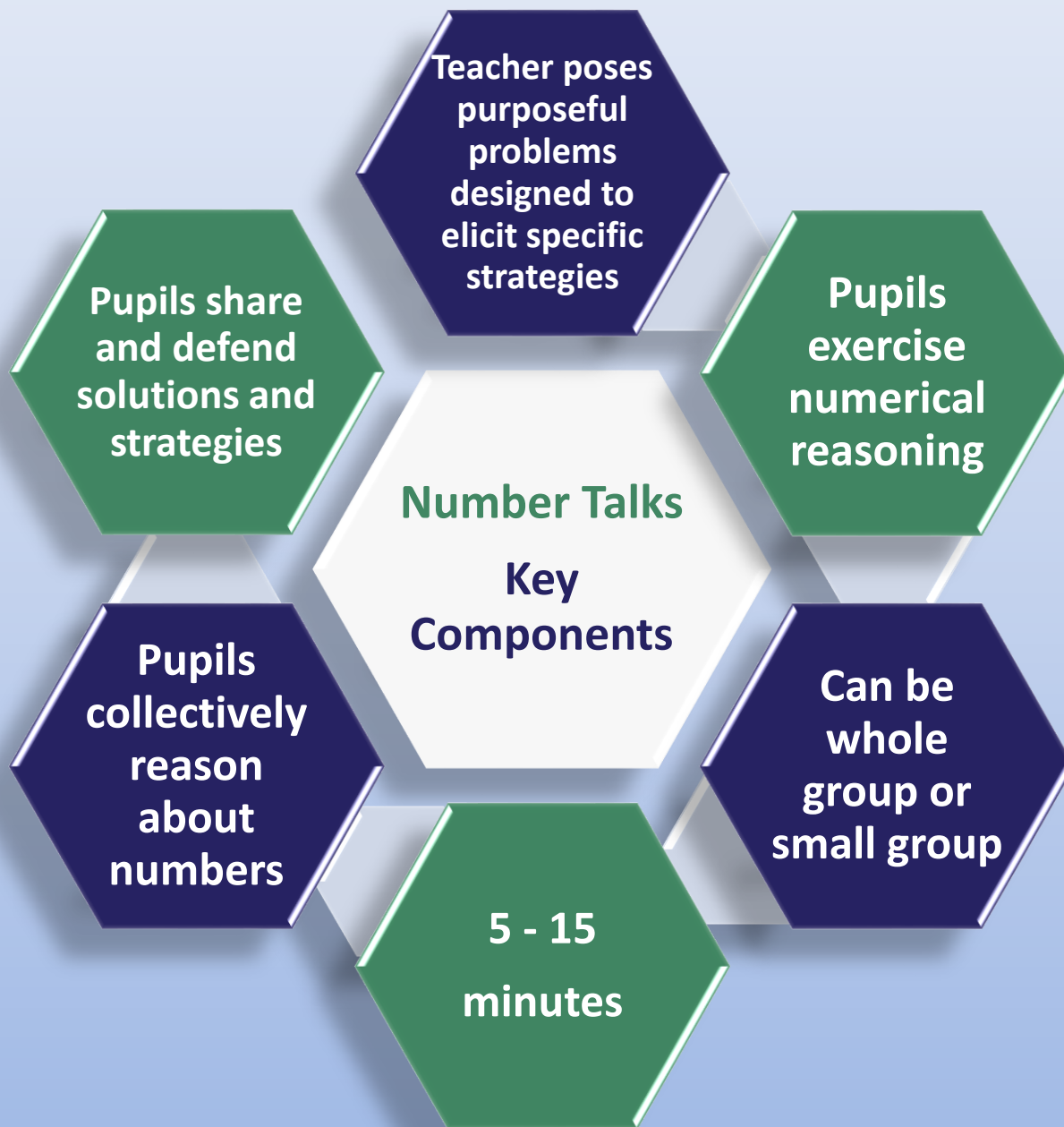
Workshop 1

- Develop number sense through Number Talks and use of models (including Ten Frames and Dot Patterns)
- Develop fluency within ten
- Subitising
- Making tens

Workshop 2

- Develop number sense through Number Talks and use of models (including Empty Number Line and Hundred Square)
- Explore mental strategies for addition and subtraction
- Explore assessment and recording





(Parrish, 2010)

Number Talk

Empty Number Line

$$23 - 19$$

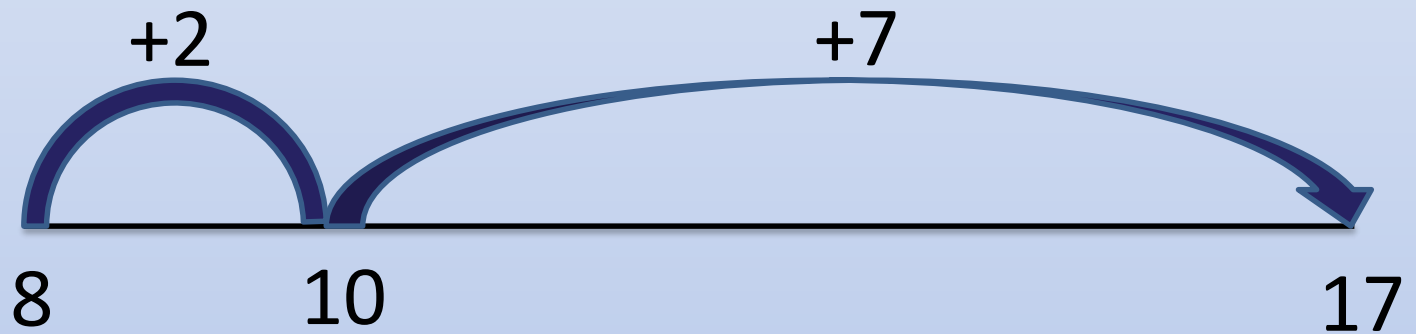
$$23 - 16$$

think
addition

$$23 - 14$$

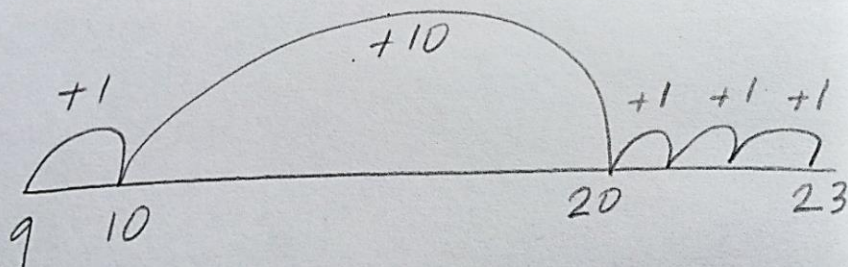
$$23 - 9$$

Empty Number Line for $8 + 9 =$



Assessment: The exit problem

$$23 - 9 = 14$$



$$23 - 9$$

$$23 - 10 = 13$$

$$13 + 1 = 14$$

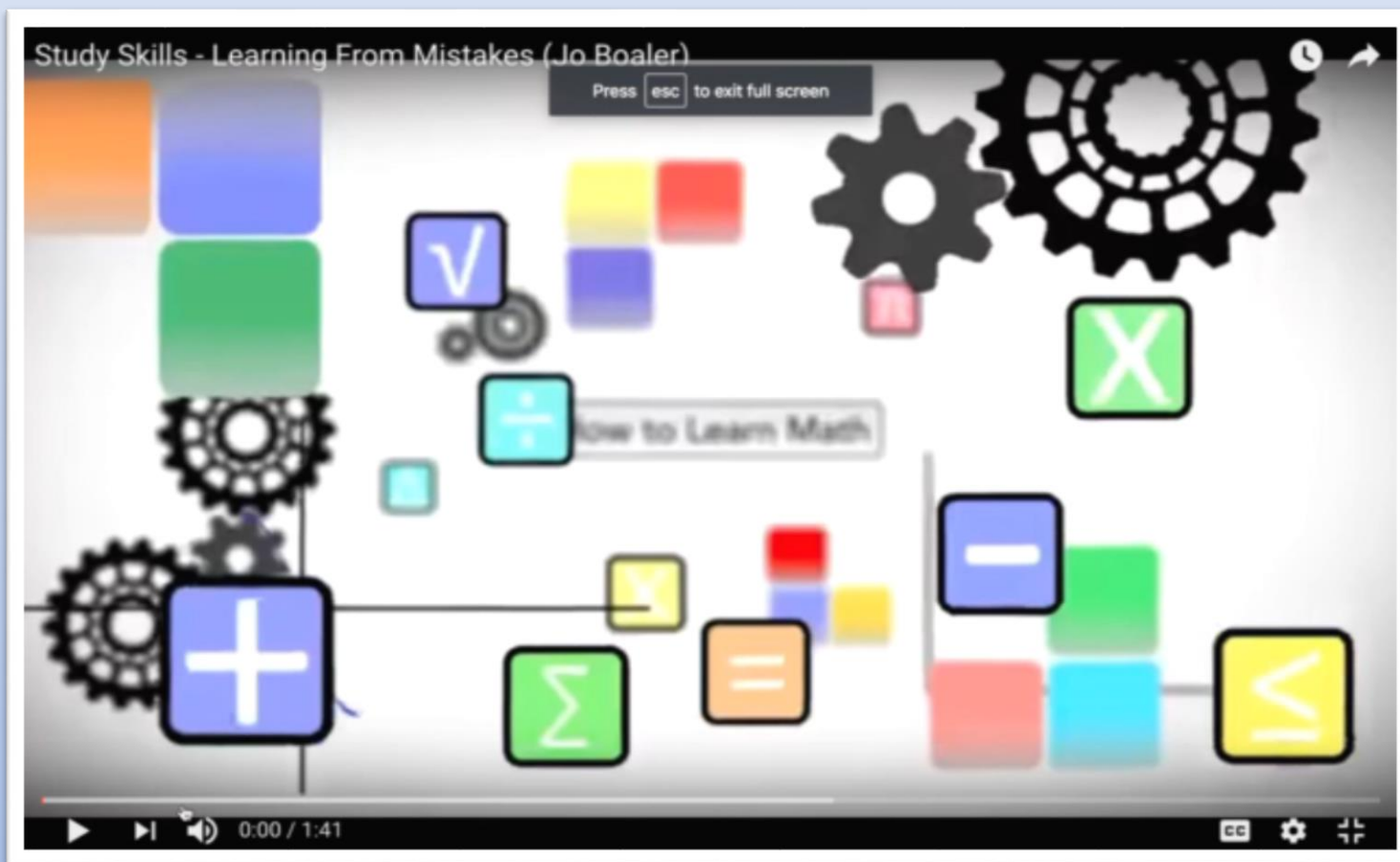
Think – Pair – Share

How are pupils errors dealt with in the classroom?

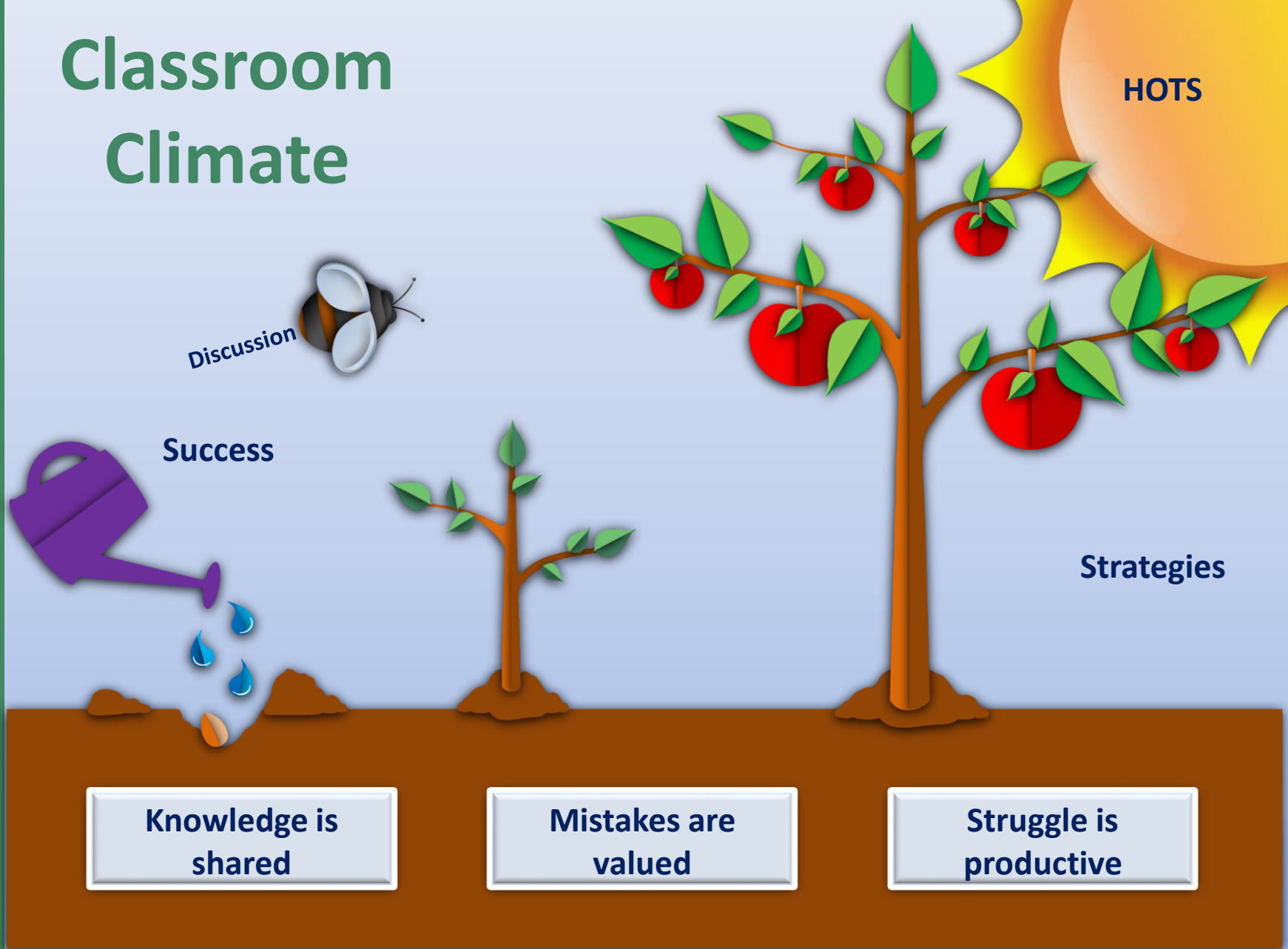
How do pupils feel when they make a ‘mistake’?



Mistakes or Steps?



Classroom Climate



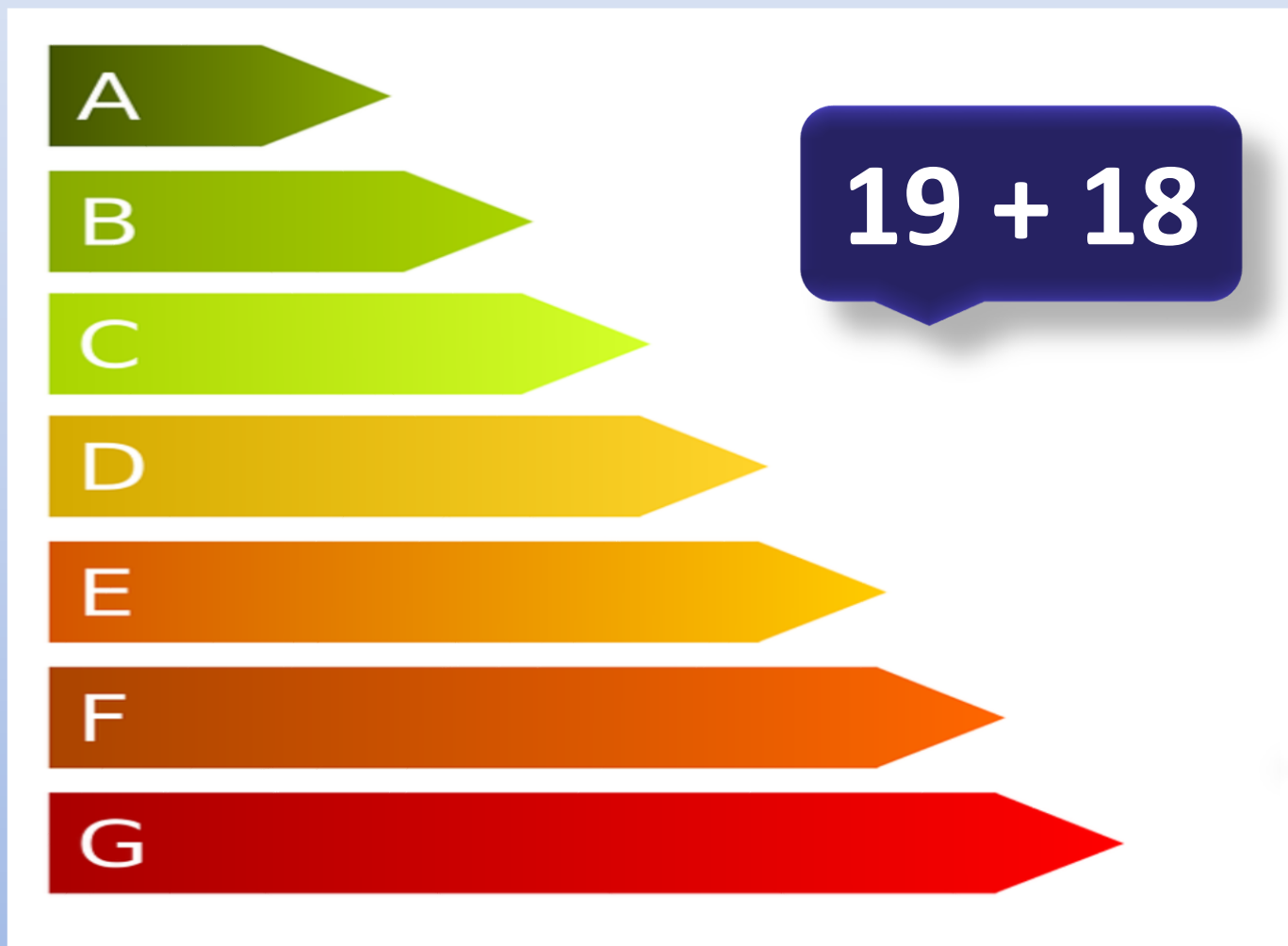
Teacher Recording

Ms Clarke's and Mrs Doyle's classes are going to the zoo. Ms Clarke's class has 19 pupils and Mrs Doyle's has 18. How many pupils are going to the zoo?



How will you capture each pupil's thinking so that others may access the strategy?

Discussing Efficiency



Keeping a
Constant
Difference

Counting
forwards and
backwards,
Counting on

Making
5 / 10

Partitioning
by Place
Value

Compensating

Mental Maths Strategies

Doubles /
Near
Doubles

Think Addition
(Shopkeepers
Method)

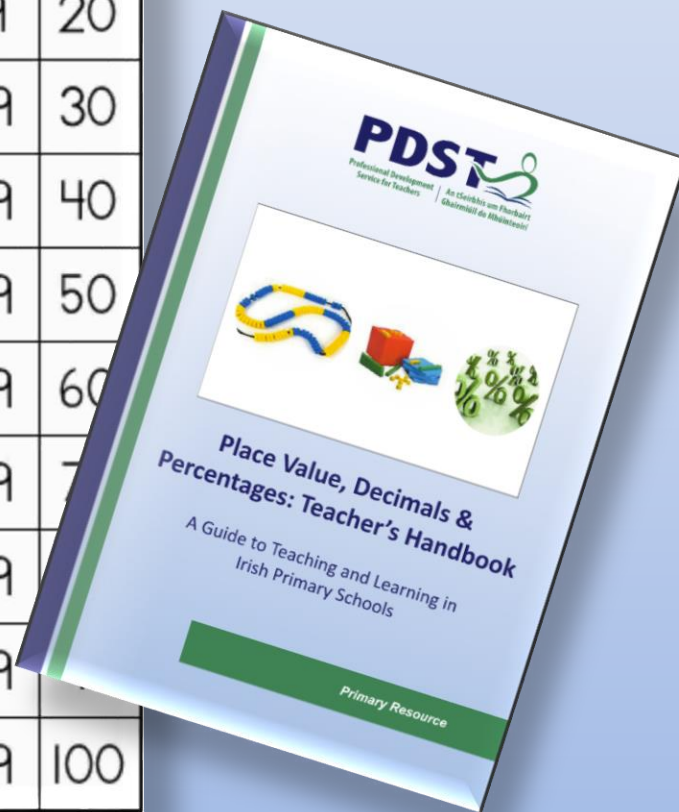
Bridging
Through 10



Reordering

100 Square

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Specific Situations

It is helpful to frame computation problems in a brief context so that the numbers can be anchored to specific situations.

For example

13 – 7 could be framed in a story as

I want to read 13 pages each night.

I have read 7 pages.

How many more pages do I need to read?

The context supports the reasoning and can also influence specific strategies.

Table Number Talk

1

**Choose a strategy
from PDST manual**

2

**Create a purposeful
string of 3
problems, use a
'story' for first
problem**

3

**Conduct a mini NT,
use the 100s square
to model the
strategy**

Traditional Algorithm

Solve the following using the traditional algorithm:

$$17 + 18 =$$