Objective: I can add tens to three digit numbers.

NAS 1: add and subtract numbers mentally, including:
a three-digit number and tens

Assessment Question 2:

Prior Learning:

Question 2:
I can add tens to 3 digit numbers.

Addition & Subtraction

I feel

Add these amounts together:

a) 113 + 10 =

b) 256 +10 =

c) 165 + 20 =

d) 356 + 30 =

e) 294 + 10 =

f) 198 + 20 =

Input ideas:

- Model and discuss how ten can be added to a 3 digit number. Using a place value chart, show the children what happens to the tens digit when ten is added (for example 165 + 10). Keep adding ten more to show the children that it is only the tens digit that is changing. Why? Model to the children what happens when we add ten more to 195. What can I do? What digit do I need to place here? How do I know this? Why is the hundred digit changing? Some children may need to see this alongside objects that are grouped in hundreds, tens and ones to visually see that a new hundred has been made. Once the children show understanding here, model adding twenty more and thirty more. What happens to the digits now?
- (Game) Children to think of a 3 digit number with a 1 in the hundreds place. Then scatter different coloured cards for children to collect. Such as green cards could have plus 10, yellow cards could have plus 20 and red cards could have plus 30. Children to collect the cards and explore adding these amounts mentally to their starting number as they collect them.

- Encourage the children to explain in learning partners what happens to the digits is when 10, 20 or thirty is added. Which digits stay the same? Why? When does the ten digit change? How do you know? Which digit will we need to look at when we add ten more? Why? Can you give me an example of a sum for adding ten more? What will the answer be? How did you work it out?

Practice Activities

Purple Practice: most suited for children who show misconceptions in question 2 a, b , c and d in the prior learning assessment.

The purple activity will support children who are still securing counting beyond 100 in tens from any number. The children are provided with a hundred square that is completed for them. They are to look at counting on in ten. At this stage, children should understand that each row of the hundred square contains ten squares therefore they should begin to know that the square beneath the number is ten more. Encourage children to explore this and move away from counting on in ones when adding ten. Ask the children what they notice about the digits that change when ten is added. How do they know this? Why does this happen? Children are then provided with blocks with questions where they are to add on ten and then gradually use this knowledge to add on multiples of ten. The children should be able to spot that in these questions, it is only the tens digit that changes. Children could also use blank place value charts to help them to spot the value of the digits.

Once the children show understanding and confidence here, they should then be introduced to what happens when ten is added to a 9 digit in the tens column (such as in green activity). The children may need to explore this practically using objects grouped ion hundreds, tens and ones.

Green Practice: most suited for children who have demonstrated errors in Question 2 e and f and need to secure crossing the hundred boundary when ten or multiples of ten are added.

For this activity, the children are provided with questions where they are required to add multiples of ten and cross a hundred boundary when doing so. The children may benefit from using place value charts and images of groups of objects or objects that are grouped in ten, hundreds and ones(see green resources sheets). The children are to explore how a new hundred is made when adding ten or multiples of ten. The children are to discuss and explain what happens to the hundred digit and why.

<u>Yellow Practice</u> most suited for children who can count on in tens and show accuracy in Question 2 of the prior learning assessment.

This activity provides the children with the opportunity to further develop mental strategies of adding on tens and ones. The children should use partitioning to add the tens and ones when counting on. Encourage the children to add on the scores the children have received to the total house points mentally to work out which team has the highest number of house points. The children are then further challenged to apply their knowledge of ordering numbers to rank the house points from highest to lowest.

<u>Mastery Fluency</u>

For this activity the children are provided with number sequences to apply their knowledge of mentally adding ones and tens. The children should be encouraged to spot the pattern and the gaps between each number. As the sequences progress, the difficulty increases. The children also are required to cross boundaries of ten and hundred in some of the sequences.

Key questions:

- What pattern do you notice?
- What is the next number in the sequence?
- This number is missing, so how will you work out what needs to be placed in this box?
- How can you check this answer is correct?

Answers :

Purple:

1) Add **10** to each block.

145	167	101	180	129
155	177	111	190	139

2) Add **20** to each block.

269	151	207	176	219
289	171	227	196	239

3) Add **30** to each block.

234	257	123	212	109
264	287	153	242	139

4) Add **40** to each block.

301	245	231	317	156
341	285	271	357	196

Green :

Red House 509

Blue house 421

Green house 445

Yellow House 502

Order:

Red house   Yellow house   Green house   Blue house

Yellow:

Red house 487

Blue house 450

Green House 451

Yellow 475

Order:

Red House   Yellow house   Green house   Blue house

Mastery

1) 312 313 314 315 316 317
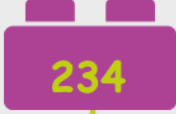
2) 195 196 197 198 199 200

3) 252 242 232 222 212 202

4) 375 365 355 345 335 325

5) 184 194 204 214 224 234

6) 440 460 480 500 520 540

7) 124 135 146 157 168 179

8) 122 144 166 188 210 232

Purple Practice

LO: I can add tens and multiples of ten to 3 digit numbers.

1) Add **10** to each block.

| 145 | 167 | 101 | 180 | 129 |

2) Add **20** to each block.

| 269 | 151 | 207 | 176 | 219 |

3) Add **30** to each block.

| 234 | 257 | 123 | 212 | 109 |

4) Add **40** to each block.

| 301 | 245 | 231 | 317 | 156 |

BRICKWORK Mathematics

101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200

BRICKWORK
Mathematics

201	202	203	204	205	206	207	208	209	210
211	212	213	214	215	216	217	218	219	220
221	222	223	224	225	226	227	228	229	230
231	232	233	234	235	236	237	238	239	240
241	242	243	244	245	246	247	248	249	250
251	252	253	254	255	256	257	258	259	260
261	262	263	264	265	266	267	268	269	270
271	272	273	274	275	276	277	278	279	280
281	282	283	284	285	286	287	288	289	290
291	292	293	294	295	296	297	298	299	300

BRICKWORK
Mathematics

At Holly Well Primary School the children are organised into houses.
There are 4 houses. Each week children collect points for their house.

Here are the totals of each house:

Red House	Blue House	Green House	Yellow House
389	291	365	452

Add the children's points from the week below to their house:

10
10
50

20
30
10

10
10
40

10
10
40

50
20
10

10
20
20
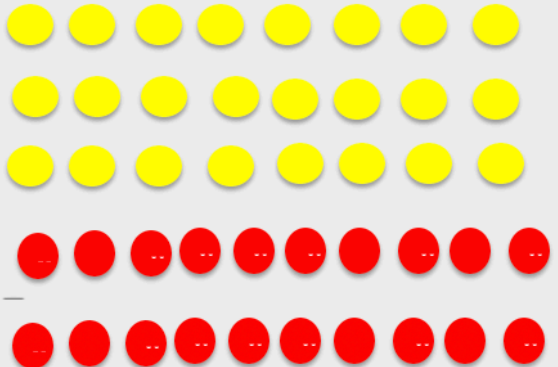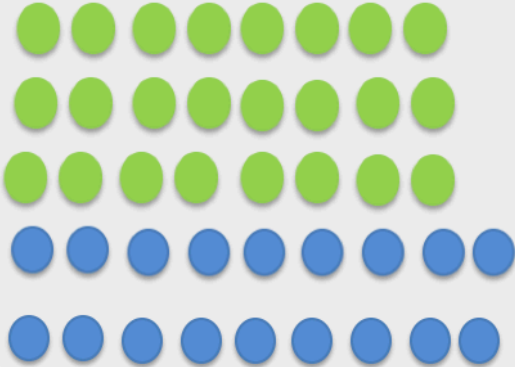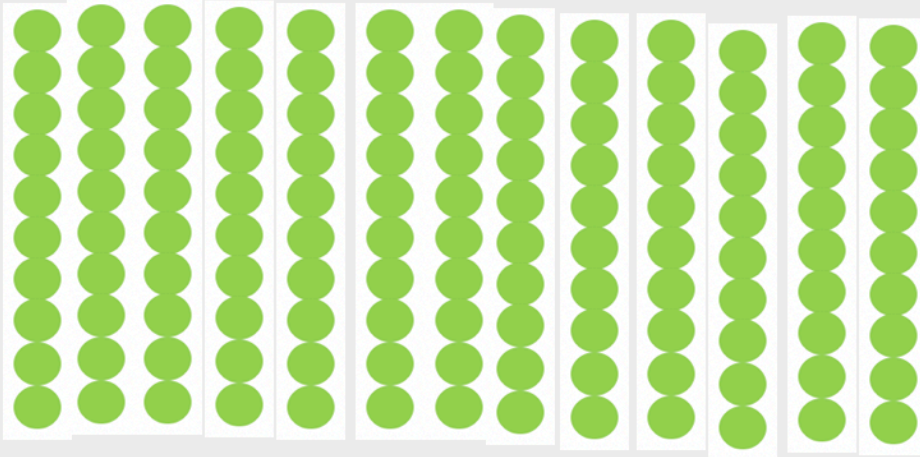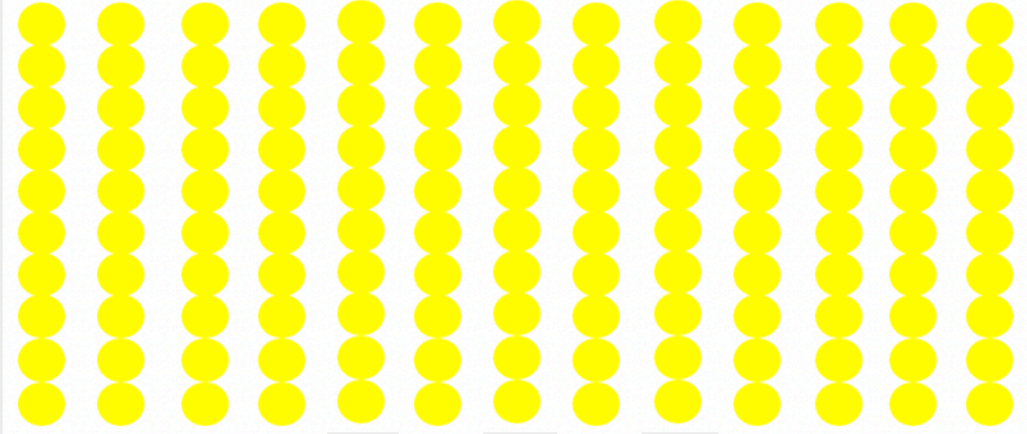
Challenge: which house has the most points? Can you order the 4 houses from the house with the most points to the house with the least points?

BRICKWORK Mathematics

tens

ones

tens

100

100

BRICKWORK Mathematics

100	100
100	100
100	100

BRICKWORK
Mathematics

100	100
100	100
100	100

100	100
100	100
100	100

BRICKWORK
Mathematics

100	100
100	100
100	100

BRICKWORK
Mathematics

At Holly Well Primary School the children are organised into houses.
There are 4 houses. Each week children collect points for their house.

Here are the totals of each house:
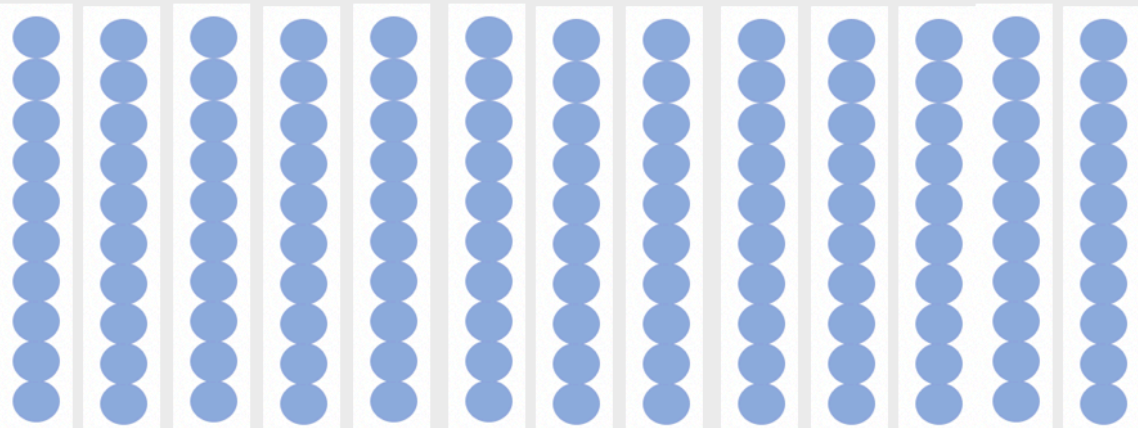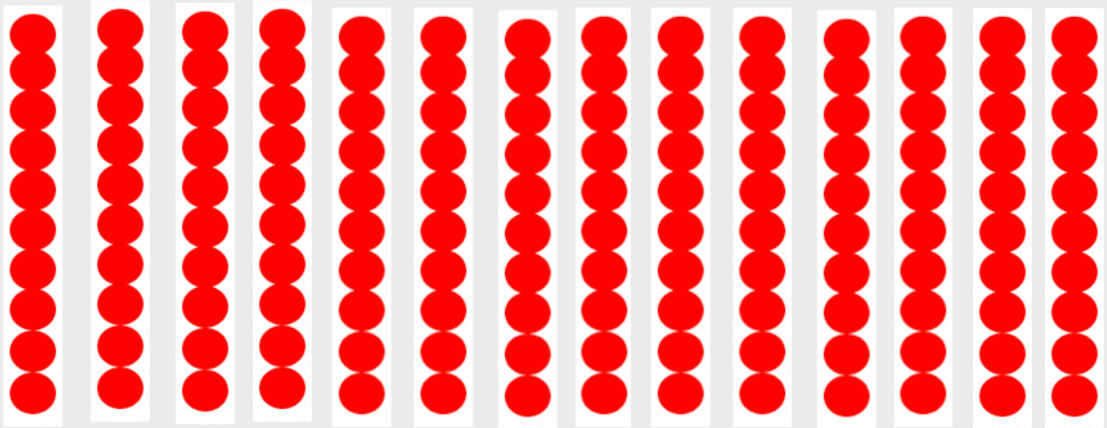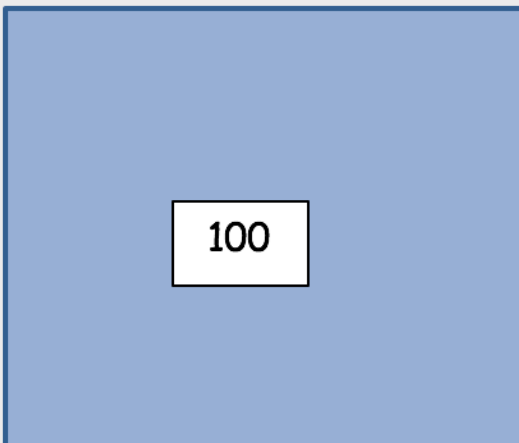
Red House	Blue House	Green House	Yellow House
389	291	365	412

Add the children's points from the week below to their house:

10
22
53

15
33
26

11
12
25

11
24
15

35
27
24

12
23
28

Challenge: Which house has the most points? Can you order the 4 houses from the house with the most points to the house with the least points?

BRICKWORK
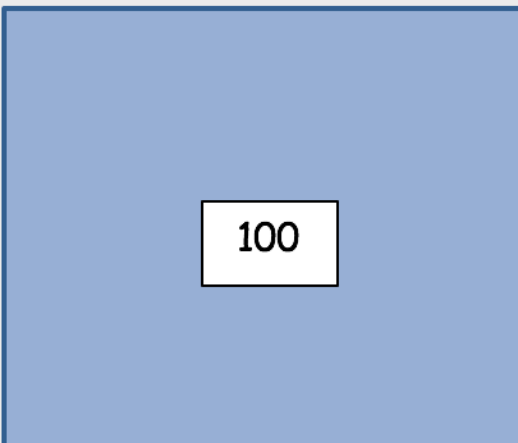## Mathematics

Look at each number sequence. Can you work out the missing numbers?

1) 312 | 313 | 314 | 315 | ☐ | ☐

2) 195 | 196 | 197 | ☐ | ☐ | ☐

3) ☐ | ☐ | ☐ | 222 | 212 | 202

4) ☐ | ☐ | ☐ | 345 | 335 | 325

5) 184 | 194 | ☐ | ☐ | 224 | 234

6) 440 | 460 | 480 | ☐ | ☐ | ☐

7) 124 | 135 | ☐ | ☐ | ☐ | 179

8) 122 | 144 | 166 | ☐ | ☐ | ☐

© Copyright 2018 Brickwork Mathematics