**Week 12 Day 3 Task 1: Woking towards ARE**

* Make 2 teams.
* 1 child from the first team places a counter on a single digit number on a 1-100 grid.
* Flip a coin. If it lands heads-up, one child from the group adds 11, if it lands tails-up, the child adds 21.

*What is 10 + 11? How do we move across the grid?*

*What is 30 + 21?*

* Now the second team takes a turn using a different coloured counter. Second team also place it on the top row of the 1-100 grid and then add either 11 (heads) or 21 (tails).
* Keep taking it in turns.
* Which team reaches the bottom row first to win?

*Does it matter which number we choose to start?*

* Play again. *How good are we getting at adding 11 or 21?*

**Outcomes:**

I can add 11 and 21 using a 1-100 grid.

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| Learning Outcomes/Rubrics: |
| I can add 11 and 21 using 1-100 grid. |  |
| I can fing which way to go to add ones and tens on 1-100 grid. |  |

**Day 3 task 2:**

Solve sheet 1.

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**Week 12 Day 3 Task 1: Woking at ARE**

**Pairs**

**Whole class investigation**

* Working in pairs, place a counter on 1 on a 1-100 grid, then add 11 (by moving down and across), ringing the number they land on.
* Then add 11 again.
* Then carry on until they reach 100, ringing the numbers in this ‘chain’: 12, 23, 34 etc. Do you notice anything interesting, e.g. the 1s digit is always 1 more than the 10s digit..?
* Repeat, this time starting at 2 and repeatedly adding 11. How far can you go? *What happens when you reach 79?* Is there a similar/different pattern?
* Then start on 1 and repeatedly add 12. What happens to the pattern this time? Can you begin to explain the patterns you observe?
* Repeat, adding 13.
* Then 21, 22, 23.

**Outcomes:**

I can add 11, 12, 13, 21, 22 and 23 using a 1-100 grid.

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| Learning Outcomes/Rubrics: |
| I can add 11 and 21 using 1-100 grid. |  |
| I can fing which way to go to add ones and tens on 1-100 grid. |  |

**Day 3 task 2:**

Solve sheet 2

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**Week 12 Day 3 Task 1: Greater Depth**

**Pairs**

**Whole class investigation**

* Working in pairs, place a counter on 1 on a 1-100 grid, then add 11 (by moving down and across), ringing the number they land on.
* Then add 11 again.
* Then carry on until they reach 100, ringing the numbers in this ‘chain’: 12, 23, 34 etc. Do you notice anything interesting, e.g. the 1s digit is always 1 more than the 10s digit..?
* Repeat, this time starting at 2 and repeatedly adding 11. How far can you go? *What happens when you reach 79?* Is there a similar/different pattern?
* Then start on 1 and repeatedly add 12. What happens to the pattern this time? Can you begin to explain the patterns you observe?
* Repeat, adding 13.
* Then 21, 22, 23.
* Discuss what you notice, e.g. the diagonal pattern, when you add 11 starting at 1, both the 10s and 1s digits go up by 1, unless the 1s digit is 9. you may also have spotted that every number (except 100) had a 10s digit 1 less than the 1s digit.

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| Learning Outcomes/Rubrics: |
| I can add 11 and 21 using 1-100 grid. |  |
| I can fing which way to go to add ones and tens on 1-100 grid. |  |

**Day 3 task 2:**

Solve sheet 2 with challenge.