Lesson Printables

Be a rockstar and only print what you need!

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Odd Socks
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Twilight: 5
Midnight: 6

Extras
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**Printing in the US? Scale to 'fit to printable area' in order to get the best print.*

LESSON 1: Addition/Subtraction - Exploring near doubles and number flexibility

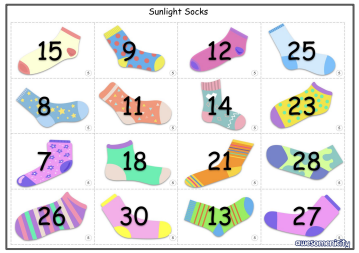
Starter	Main Activity and Input: Mentally adding near doubles. (Writing thinking steps down to show understanding)	Plenary
Holiday Roomies: Can students use the clues to work out where each animal can sleep? **To support:** 1. Encourage students to use trial and error to try to solve the problem. 2. Ask students what information they already know by using the clues. 3. Give students the location of 1 of the animals. **To challenge:** 1. Is there more than one possible answer? 2. Students could write a hotel riddle of their own.	**Input:** 1. Slide 6 asks students what it means to add. Discuss ideas as a class. What happens to a number when it is added to another? What words can students connect to the plus sign? Elicit from students that when you add numbers, you join their values together to form a new total that is bigger than both original numbers. 2. Slide 7 shows different pairs of numbered socks. If you pair up the socks, what is the pair total? How could students write this as a number sentence? Have students share their thinking on the board. Ask students what happens when a number is doubled. On slide 8, we have modelled addition and multiplication number sentences to show that doubling is either adding a number twice or having two groups of the same amount. For example, 2 groups of 3 or 3 + 3. 3. Slide 9 shows different odd socks with numbers on them. If the odd socks pair up, how can students find the pair total? Have students discuss possible strategies as a class. Elicit from students that if they know doubles, that means they can add near doubles. Slide 10 models using flexible thinking and near doubles to solve 7 + 8. By breaking 8 into 7 and 1, you can use your doubles knowledge to double 7 and then add 1 to get the solution. Slide 10 asks students if they can use the information shown to complete the tape diagram. 4. Slide 11 shows a new group of odd socks. How could students add these amounts together using a mental strategy? How many different ways can students show their thinking? Model exploring the flexibility of numbers. 14 could be broken into 12 and 2. Students could now double 12 and then add 2 to find the total. 5. Slide 13 repeats this process. How many different ways can students find the odd sock total? On slide 14, we have modelled tape diagrams that show doubling 17 and adding 3. We have also modelled doubling 20 (because it is an easier number to double) and subtracting 3. Elicit from students that we have subtracted 3 because we added 3 to make 17 into 20. Note, students might find it easier to add 10 to 20 and then 7 to get their answer. We are simply showing students that there are many ways to add numbers mentally. By learning lots of strategies, they can then pick which ones suit them best. **Activity: Matching odd socks using near doubles and number flexibility.** 1. Print and cut out odd socks for each learning zone. Students can work in pairs or individually, looking for near doubles and physically matching up the socks. This is student led, so students can choose how they want to pair up their socks. However, encourage students to add numbers that are near each other. For example, add 24 and 27 rather than 24 and 52, as the latter number sentences would not require students to practise adding doubles or near doubles. Answers will vary depending on what socks students choose to match up. Note, while this is a mental strategy, students could use tape diagrams to show their thinking. **To support:** 1. Sunlight Zone works with numbers less than 20. 2. Students could use 100s charts to help them double numbers. **To challenge:** 1. Ask students to find more than 1 way to pair the odd socks together. For example, 17 could be paired with 20 and it could also be paired with 15. 2. Students could complete the guided questions found in the printables. These could be used in any learning zone. 3. Student could draw and make their own odd sock combinations.	**Let's reflect:** How do students feel about this strategy? Can they explain if they think it is a tool they will use or one that mainly stays in the toolbox (metaphorically speaking)? **Discsus:** 1. Can students explain how they feel about using doubles and near doubles to add numbers mentally?

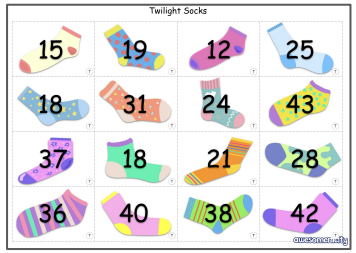
Things that might be useful for this lesson:

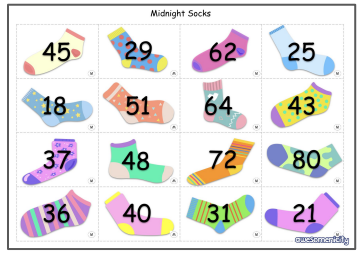
- Individual whiteboards:
  - ➔ Help students to record their thinking and share ideas with others.
- 100s charts:
  - ➔ Help students to count on when doubling. For example, to double 4, students could find 4 and count on 4 more. What number do they land on?
- Strategy thinking steps
  - ➔ Break the strategy down into smaller pieces.

Peek at the Printables:

Sunlight Zone	Twilight Zone	Midnight Zone







Greener Alternatives:

- ➔ Students could roll dice or flip over playing cards and double the number that they get.
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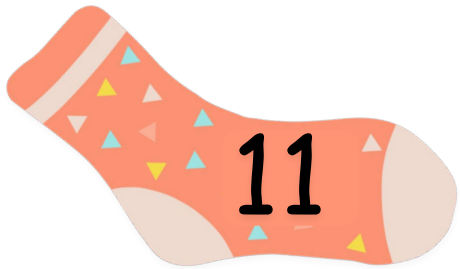
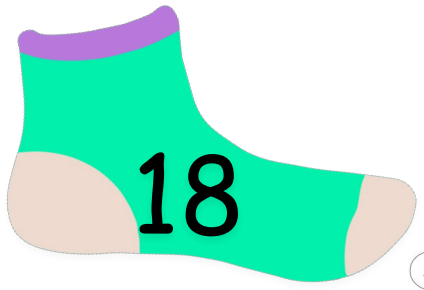
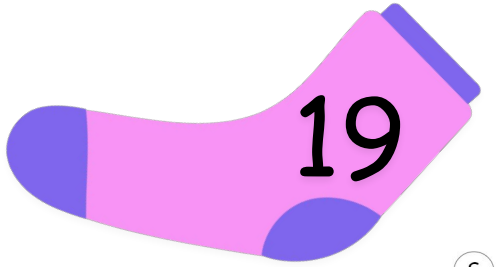
- ➔ You could write numbers on post-it notes. Students could select numbers to add together.

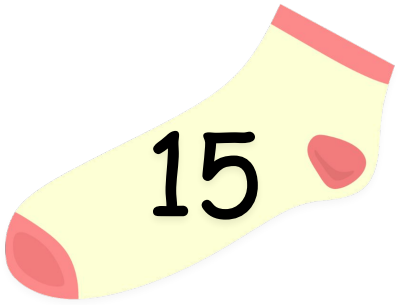
Sunlight Socks

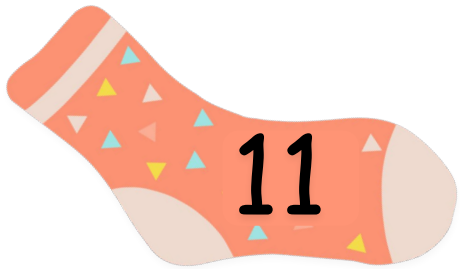


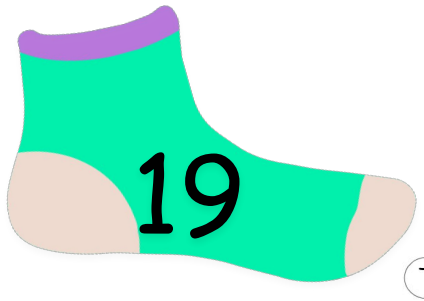


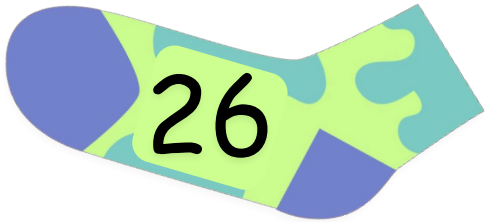


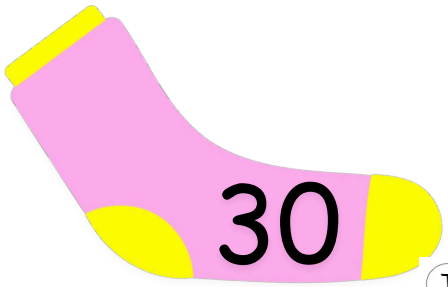
Twilight Socks

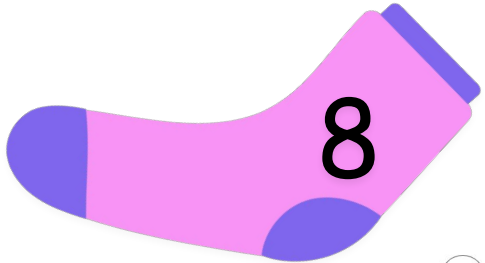




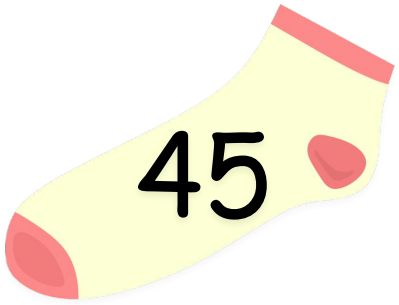


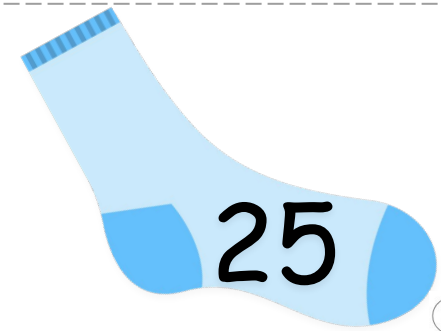


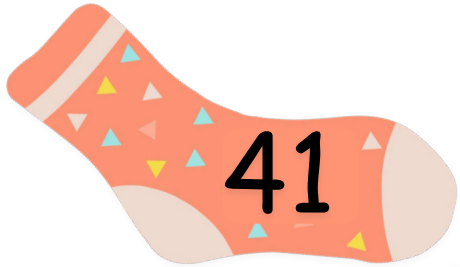


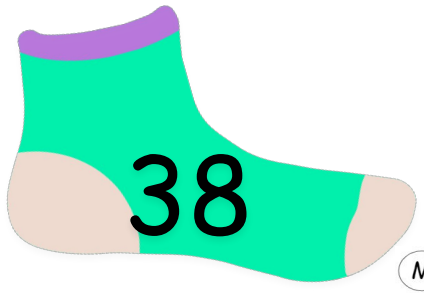


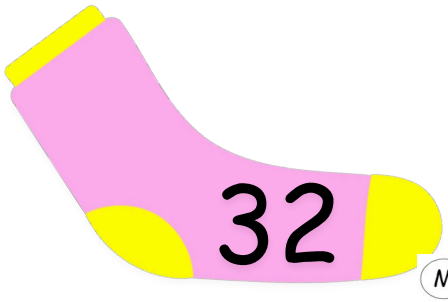
Midnight Socks











100s Charts

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

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

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41	42	43	44	45	46	47	48	49	50
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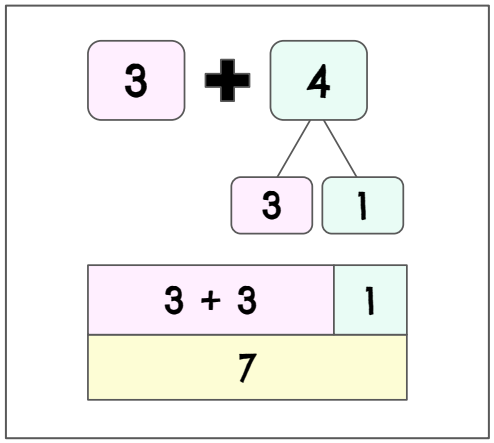
91	92	93	94	95	96	97	98	99	100

Near Doubles Thinking Steps

Near Doubles Strategy Steps

1. Look for numbers that are close to each other.
2. Can you break up one of the numbers in order to get doubles?
3. Show how you have broken up your number.
4. Add the doubles and then the remaining amounts.



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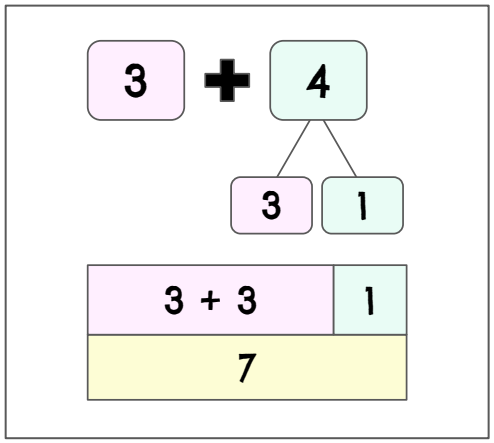

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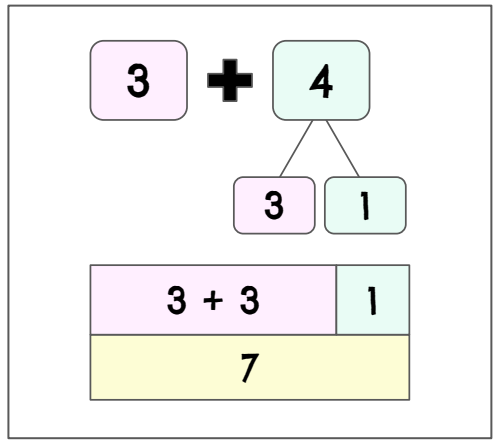

Question Prompts

Can you find...

1. Near doubles that make a total that is an even number?
2. Near doubles that make a total that rounds up when rounded to the nearest 10?
3. Near doubles that make a total that rounds down when rounded to the nearest 100.
4. Near doubles that make a total that is 4 away from a round number?
5. Near doubles that make a total that rounds down to the nearest 10 but rounds up to the nearest 100?

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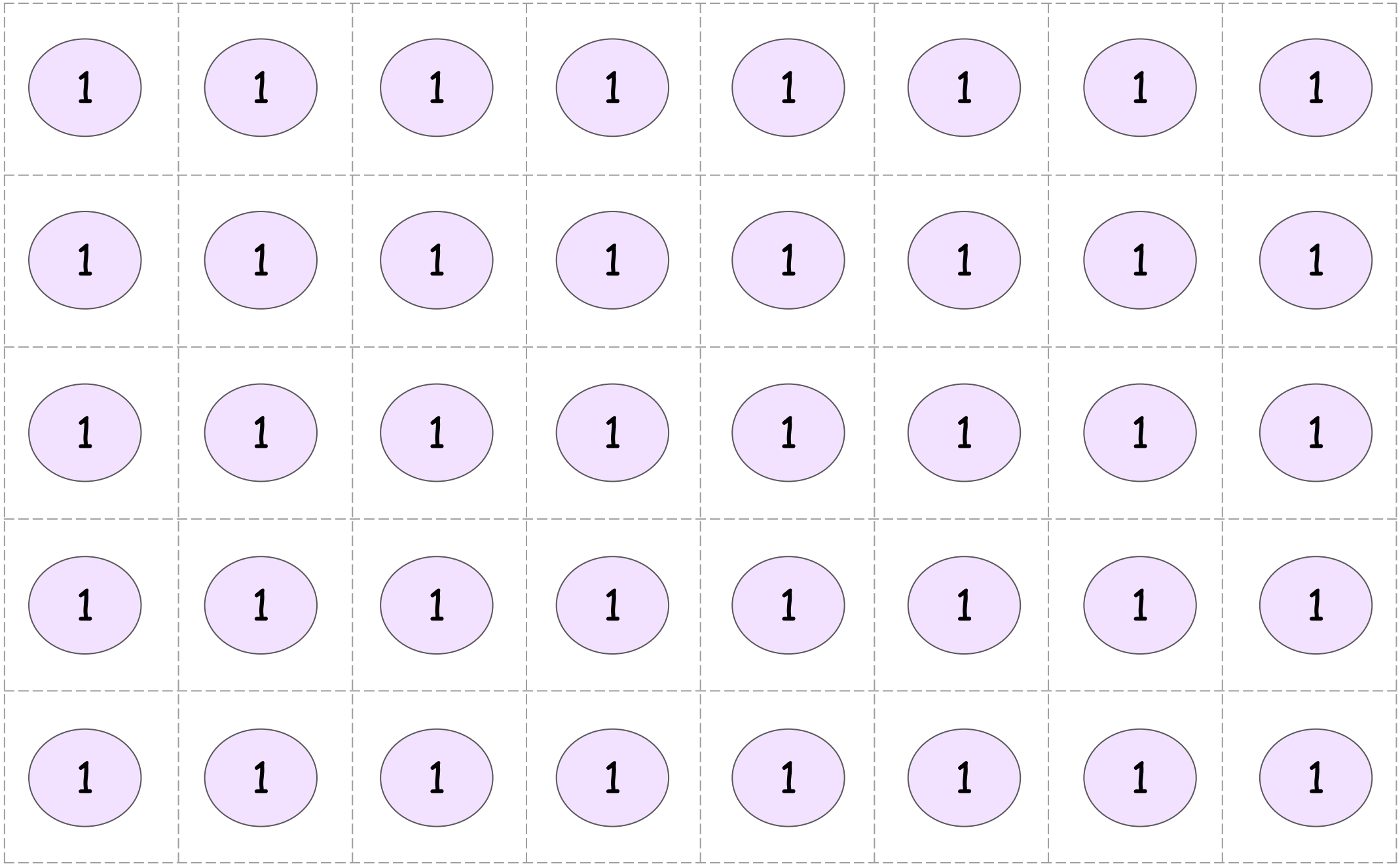
Question Prompt Answers

Answers will vary depending on what learning zone students choose. Below are examples of one possible solution for each learning zone. Note, the final question can not be answered by students in Sunlight Zone.

Can you find…

1. Near doubles that make a total that is an even number?
   - ➔ Sunlight: 8 + 6 = 14
   - ➔ Twilight: 12 + 14 = 26
   - ➔ Midnight: 29 + 31 = 60
2. Near doubles that make a total that rounds up when rounded to the nearest 10?
   - ➔ Sunlight: 12 + 13 = 25
   - ➔ Twilight: 14 + 15 = 29
   - ➔ Midnight: 62 + 64 = 126
3. Near doubles that make a total that rounds down when rounded to the nearest 100.
   - ➔ Sunlight: 11 + 12 = 23
   - ➔ Twilight: 9 + 12 = 21
   - ➔ Midnight: 18 + 22 = 40
4. Near doubles that make a total that is 4 away from a round number?
   - ➔ Sunlight: 12 + 14 = 26
   - ➔ Twilight: 12 + 14 = 26
   - ➔ Midnight: 36 + 38 = 74
5. Near doubles that make a total that rounds down to the nearest 10 but rounds up to the nearest 100?
   - ➔ Twilight: 30 + 31 = 61
   - ➔ Midnight: 25 + 26 = 51

Ones Place Value Counters



Tens Place Value Counters