

Lesson Printables

Be a rockstar and only print what you need!



Lesson Information Sheet: 2

Sunlight Zone

Activity: 3

Bump Strategy Thinking Steps: 4

Answers: 5

Twilight Zone

Activity: 6

Bump Strategy Thinking Steps: 7

Answers: 8

Midnight Zone

Activity: 9

Bump Strategy Thinking Steps: 10

Answers: 11

Let's use bump strategy as a mental strategy

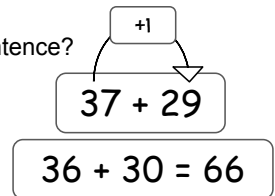
Why learn this?

Bump strategy is a mental addition strategy where students adjust numbers to make them easier to add. This strategy reinforces number flexibility and improves students' number sense so that they can add numbers mentally in an efficient way. Note, while we have said this is a mental strategy, students are welcome to write down their thinking in order to practise adjusting numbers and making new number sentences.

How does bump strategy work? How do you use rounding to check if an answer is reasonable?

Using bump strategy to add

- Write down a number sentence. Let's use $37 + 29$.
- Look at your numbers. Can you adjust one of them to make the number sentence easier to work with?
 - Either number can be adjusted or 'bumped'.
 - 29 could be bumped to become 30.
- Draw an arrow to show your bumping. How does your bump effect the other number in your number sentence?
 - If we bump 29 to 30, 37 loses 1, so the new number sentence is $36 + 30$.
 - If students are doing this mentally, they do not need to write down their thinking. This is simply an opportunity for you to 'see inside' your student's head.
- Solve your new number sentence.
 - $36 + 30$ is 66.



Rounding for reasonableness

- By rounding numbers (in this case to the nearest 10), students can get a 'target zone'. This is a number that their answer should be 'near'. If a student's answer is far away from the target zone, this indicates that they do not have a reasonable answer and should revisit their work.
- Students should apply their number sense in order to fully understand using this strategy to check their answers.
 - 23 and 34 both round down to the nearest 10, so the real answer to the sum will be more than 50.
 - If you round both numbers up, the real answer should be less than the target zone number.
 - If you round one number down and the other number up, your answer should be quite close to the target zone number.

Let's warm up!

Starter Activity - Nuts, Nuts, Nuts

Students are shown a squirrel with 4 baskets and 13 nuts. If the squirrel wants to organise the nuts so that it can pay any amount from 1 nut to 13 nuts with the baskets, how could it organise the nuts?

To support, students could:

- Use objects to represent the 13 nuts and circles to represent the baskets so students can physically explore the problem.
- Be asked guiding questions.
 - How could the squirrel make a 1 nut payment? (Must have 1 basket with 1 nut.)
 - How could it make a 2 nut payment? (Must have 1 basket with 2 nuts.)
 - How could it make a 3 nut payment? (Pay with the baskets that have 2 nuts and 1 nut because $2 + 1 = 3$.)

To challenge, students could:

- Identify all the ways the squirrel could make a payment from 1 nut to 13 nuts using the baskets.

Let's do this!

Main Activity - Students are shown a food truck with a disgusting menu and animals who have a budget or provide clues on how much money they have spent. Can students use bump strategy to identify possible purchases or the exact order each animal made? Encourage students to explore using bump strategy to add numbers.

Note, if you are in a country that uses a currency other than dollars, you could replace the \$ sign with your own currency symbol or simply tell students to ignore the \$ sign.

To support, students could:

- Work with numbers less than 40. See Sunlight Zone.
- Use a step-by-step guide to follow bump strategy found in the printables below.

To challenge, students could:

- Identify possible purchases for each animal.
- Use rounding to the next 10 to help them check their answers or problem-solve.
- Make their own order and calculate the total.

Sunlight Food Truck

1. Make a take away order for each animal.

<u>Drinks</u>	<u>Food</u>	<u>Dessert</u>
Slime Smoothie.....\$7	Worm Burger.....\$32	Mildew Pie.....\$24
Mushroom Juice...\$6	Slug Sandwich.....\$37	Sludge-sicle.....\$17
Maggot Tea.....\$8	Ant Leg Salad.....\$25	Snot Milkshake...\$19
Sweaty Spritz.....\$9	Fly Wings.....\$34	Mud Brownie.....\$36

I've got \$45 to spend. I want to order a drink and some food.



My budget is \$75. I ordered 1 food item and 2 desserts.



I've got \$70 to spend. I want a 3 piece combo; a drink, food and dessert!



I spent exactly \$77 on a drink, food and dessert. What did I purchase?

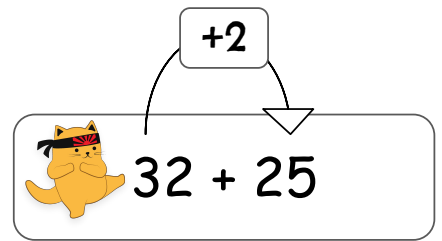


Challenge: Explore using bump strategy to add.
Excellence: Use rounding to check your answers and problem-solve.
Legend: Create your own order. You must order at least 4 items.
What will the total cost be?

Thinking Steps

Addition Bump Strategy Top Tips

1. Which number can you 'bump' in order to make it easier to add?
→ Use an arrow to show your bump.
2. Adjust your numbers and write your new number sentence.
3. Add.



$$30 + 27 = 57$$

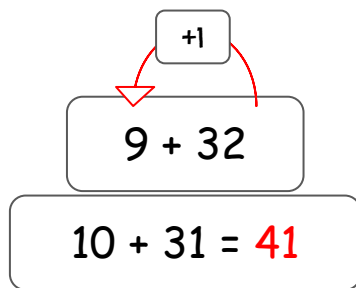
Sunlight Answers

Some answers have more than 1 possible solution.
Below are examples of some correct answers and possible thinking steps.

<u>Drinks</u>	<u>Food</u>	<u>Dessert</u>
Slime Smoothie...\$7	Worm Burger.....\$32	Mildew Pie.....\$24
Mushroom Juice...\$6	Slug Sandwich.....\$37	Sludge-sicle.....\$17
Maggot Tea...\$8	Ant Leg Salad.....\$25	Snot Milkshake...\$19
Sweaty Spritz...\$9	Fly Wings.....\$34	Mud Brownie.....\$36

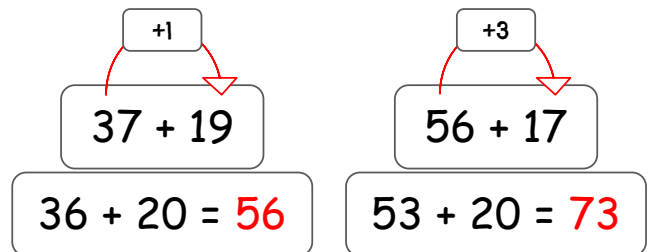
I've got \$45 to spend. I want to order a drink and some food.

Spritz, burger

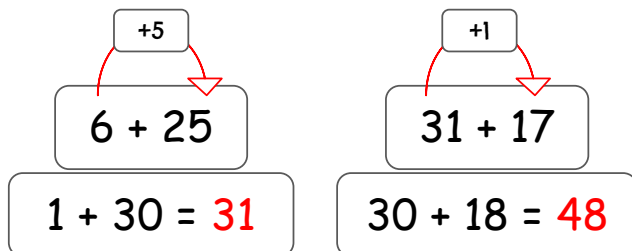


My budget is \$75. I ordered 1 food item and 2 desserts.

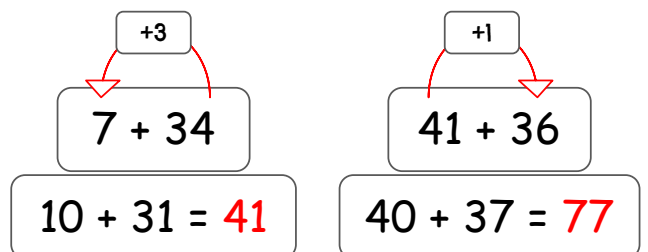
Sandwich, milkshake, sludge



I've got \$70 to spend. I want a 3 piece combo; a drink, food and dessert! **Juice, salad, sludge**



I spent exactly \$77 on a drink, food and dessert. What did I purchase? **Smoothie, wings and brownie (shown below) or spritz, burger, brownie**



Twilight Food Truck

1. Make a take away order for each animal.

<u>Drinks</u>	<u>Food</u>	<u>Sides</u>	<u>Dessert</u>
Slime Smoothie.....\$7	Worm Burger.....\$32	Bark Chips.....\$25	Mildew Pie.....\$18
Mushroom Juice...\$9	Slug Sandwich.....\$47	Mac and Fleas.....\$17	Sludge-sicle.....\$17
Maggot Tea.....\$8	Ant Leg Salad.....\$39	Goo Sticks.....\$16	Snot Milkshake...\$19

I've got \$65. I ordered a drink, a food and a side.



I've got \$75 to spend. I want a 4 piece combo; a drink, food, a side and dessert!



I spent exactly \$80 on a food and two sides.



I spent exactly \$90 on a drink, a food item, a side and a dessert. What did I order?



Challenge: Explore using bump strategy to add.

Excellence: Use rounding to check your answers and problem-solve.

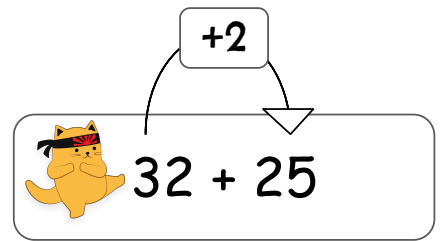
Legend: Create your own order. You must order at least 4 items.

What will the total cost be?

Thinking Steps

Addition Bump Strategy Top Tips

1. Which number can you 'bump' in order to make it easier to add?
→ Use an arrow to show your bump.
2. Adjust your numbers and write your new number sentence.
3. Add.



$$30 + 27 = 57$$

Twilight Answers

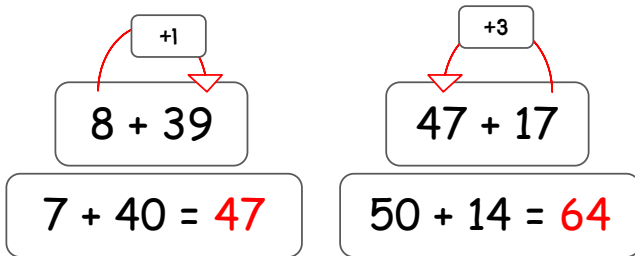
Some answers have more than 1 possible solution.

Below are examples of some correct answers and possible thinking steps.

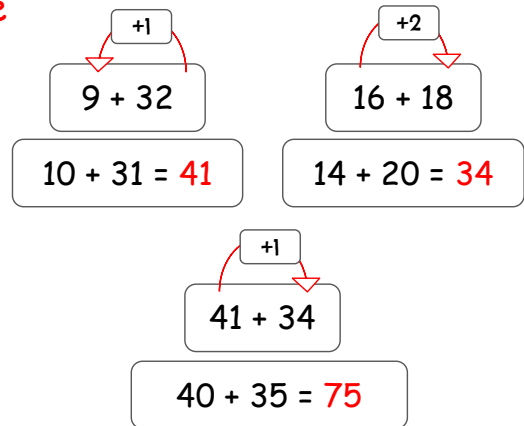
<u>Drinks</u>	<u>Food</u>	<u>Sides</u>	<u>Dessert</u>
Slime Smoothie...\$7	Worm Burger.....\$32	Bark Chips.....\$25	Mildew Pie.....\$18
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I've got \$65. I ordered a drink, a food and a side.

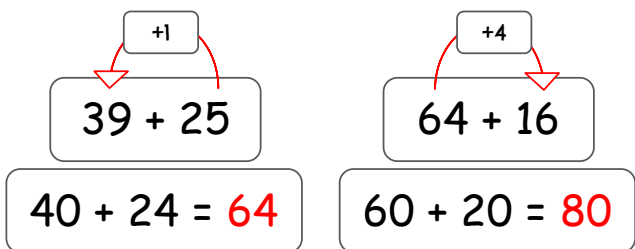
Tea, salad, mac and fleas



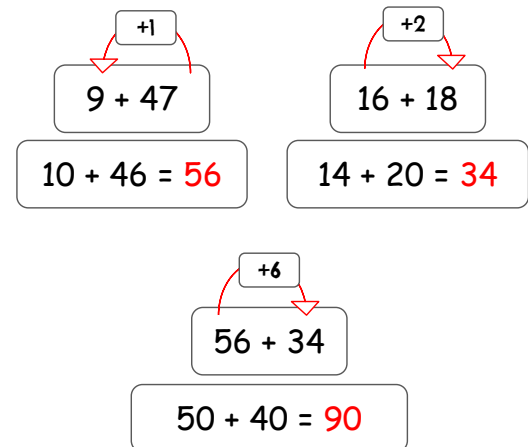
I've got \$75 to spend. I want a 4 piece combo; a drink, food, a side and dessert! Juice, burger, sticks, pie



I spent exactly \$80 on a food and two sides. Salad, chips and sticks



I spent exactly \$90 on a drink, a food item, a side and a dessert. What did I order? Juice, sandwich, sticks, pie



Midnight Food Truck

1. Make a take away order for each animal.

<u>Drinks</u>	<u>Food</u>	<u>Sides</u>	<u>Dessert</u>
Slime Smoothie...\$17	Worm Burger.....\$82	Bark Chips.....\$65	Mildew Pie.....\$28
Mushroom Juice...\$19	Slug Sandwich.....\$97	Mac and Fleas.....\$47	Sludge-sicle.....\$27
Maggot Tea.....\$18	Ant Leg Salad.....\$113	Goo Sticks.....\$56	Snot Milkshake...\$29

I spent exactly \$130 on a drink and two side items.



My budget is \$200. I want to order an item from each menu.



I spent exactly \$189 on a food, one side and one dessert.



I spent exactly \$216 on a drink, food, a side and a dessert. What did I purchase?

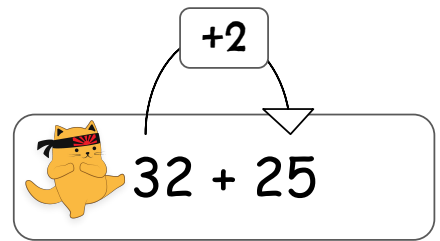


Challenge: Explore using bump strategy to add.
Excellence: Use rounding to check your answers and problem-solve.
Legend: Create your own order. You must order at least 4 items.
What will the total cost be?

Thinking Steps

Addition Bump Strategy Top Tips

1. Which number can you 'bump' in order to make it easier to add?
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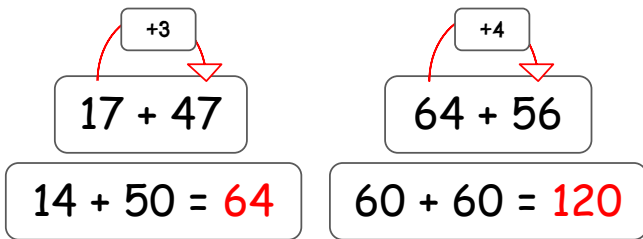
Midnight Answers

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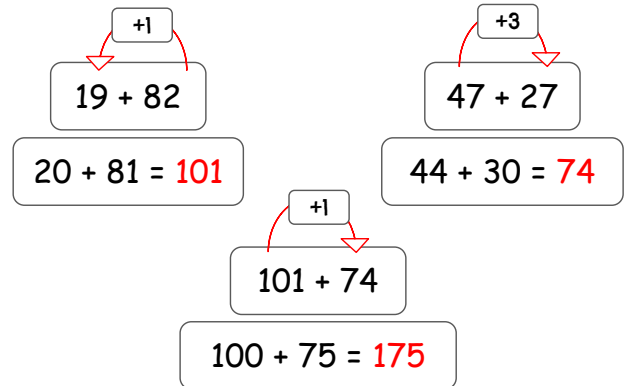
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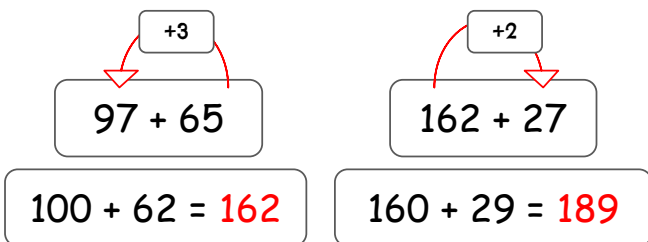
I spent exactly \$130 on a drink and two side items. **Smoothie, mac and fleas and goo sticks**



My budget is \$200. I want to order an item from each menu. **Juice, burger, mac and fleas, sludge-sicle**



I spent exactly \$189 on a food, one side and one dessert. **Sandwich, chips and sludge-sicle**



I spent exactly \$216 on a drink, food, a side and a dessert. What did I purchase? **Tea, salad, sticks and milkshake**

