

# Lesson Printables

Be a rockstar and only print what you need!



**Planners: 2-3**

## **Ice Cream**

Sunlight: 4

Twilight: 5

Midnight: 6

## **Extras**

Problem-Solving Prompts: 7

Recording Logs: 8

Thinking Steps: 9-10

Place Value Counters: 11-13

## **Answers**

Sunlight: 14

Twilight: 15

Midnight: 16

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

## LESSON 1: Addition/Subtraction - Explore mental addition strategies

| Starter  | Main Activity and Input: Using jump and split strategy to calculate ice cream scoop prices.   | Plenary   |
|--|---|---|
| <p><b>Cuckoo for Coconuts:</b> Can students work out how many coconuts could have been collected?</p> <p><b>To support:</b></p> <ol style="list-style-type: none"><li>1. Give students counters to physically show possible groups.</li><li>2. Ask students to write a list of all the multiples of 5 and then add 3. Have them do the same for multiples of 2 and then add 1. Are there any common numbers?</li></ol> <p><b>To challenge:</b></p> <ol style="list-style-type: none"><li>1. Ask students to find all the possible options.</li></ol> | <p><i>This lesson explores what mental addition strategies students are confident using. You could use this lesson as a pre-assessment to see students' overall understanding of addition and how they apply their number sense. Note, while students might use a variety of strategies we specifically model jump and split strategy addition. Other strategies will be explored in future lessons.</i></p> <p><b>Input:</b></p> <ol style="list-style-type: none"><li>1. Slide 6 asks students to pick a number on the screen and to jump while counting up in 10s from their number. Slide 7 shows solutions. What do they notice? Elicit from students that when adding 10s, the ones digit doesn't change.</li><li>2. Slide 8 shows three ice creams and their (expensive) prices. If the frog wants to order 2 strawberry scoops, what will its total cost be? How many different ways can students add mentally? Give students time to explore lots of different strategies. Ask students to share their ideas on the board.</li><li>3. Slide 9 shows solving the problem using jump strategy. To use this strategy, students should expand the smaller number and then write the bigger number at the start of a number line or 'put it in their heads'. From there, students should make mental 'jumps' to add the expanded amounts. The number they land on is the answer. Students could write down these steps.</li><li>4. Slide 10 is animated to show adding the two strawberry scoops using split strategy. This strategy is very similar to jump strategy only this time both numbers are expanded. The numbers with the same place value names can be added together. For example, add the tens together and then add the ones together. Finally, bring your answers together to get your total.</li><li>5. Slide 11 asks students how they know if an answer is reasonable. What does reasonable mean? Slide 12 shows rounding the two original numbers to the nearest 10 and finding their total. This number is the 'target zone'. The real total should be 'about' or near the target zone. In this case, both numbers rounded down, so the real answer should be bigger than the target zone number.</li><li>6. Slides 13 to 15 repeat this process with a new frog and three new ice creams. Students should find the cost of the two scoops it purchased. Slide 14 shows using jump strategy and split strategy to find the frog's total.</li><li>7. Slide 16 gives both of the strategies modelled a name to help students identify which one they prefer to use.</li></ol> <p><b>Activity: Order ice cream scoops for each monster and find the total cost.</b></p> <ol style="list-style-type: none"><li>1. Print out ice cream prices for each learning zone. Students could create their own two scoop combo for each monster shown on the screen. Students will create their own number sentences based on the ice cream combination that they choose. If you would like your students to apply their problem-solving skills instead of simply making and solving number sentences, you could use the guided prompts found in the printables. These can be used for any learning zone.</li><li>2. Encourage students to use mental strategies to find the total cost of their chosen ice cream combos. You could explain that some 'tools' get used more often than others in a toolkit. The idea is that we are making sure students know how to use jump/split strategy even if it might not be their number one strategy of choice.</li></ol> <p><b>To support:</b></p> <ol style="list-style-type: none"><li>1. Encourage students to break numbers into smaller parts to add. For example, adding by 10 several times rather than adding a big number.</li><li>2. Provide students with the jump/split strategy thinking steps found in the printables or place value counters.</li></ol> <p><b>To challenge:</b></p> <ol style="list-style-type: none"><li>1. Encourage students to use rounding to prove if their answers are reasonable.</li><li>2. Provide students with the guided prompts (see printables) in order to incorporate additional problem-solving into the activity.</li><li>3. Students could find all of the possible scoop combination totals and write them in order from most expensive to least expensive.</li></ol> | <p><b>Dream Scoop:</b> Students can construct their dream scoop. How much would it cost?</p> <p><b>Check for understanding:</b></p> <ol style="list-style-type: none"><li>1. Can students construct their ideal ice cream combo and use jump strategy to calculate the costs?</li></ol> |

## Things that might be useful for this lesson:

- Individual whiteboards:
  - Help students to record their thinking and share ideas with others.
- Place value blocks/counters:
  - Can be used to physically create the problem and then split/expand numbers.
- Coloured markers/pencils:
  - Help students to organise their thinking when splitting and jumping amounts.



## Peek at the Printables:

### Ice Creams

### Guided Prompts

### Strategy Steps



## Greener Alternatives:

- Instead of printing the ice creams/prices, write them on whiteboards and display them around your room.
- Students could flip over cards or roll dice to make number sentences.

# Sunlight Ice Creams

S

|   |   |  |
|---|---|--|
|  |  |  |
| Strawberry<br>\$44  | Mint<br>\$28  | Mango<br>\$15  |
|  |  |  |
| Vanilla<br>\$32   | Chocolate<br>\$23   | Lavender<br>\$41   |

S

|   |   |   |
|---|---|---|
|  |  |  |
| Strawberry<br>\$44  | Mint<br>\$28  | Mango<br>\$15   |
|  |  |  |
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|   |   |   |
|---|---|---|
|   |   |   |
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|  |  |  |
| Vanilla<br>\$32   | Chocolate<br>\$23   | Lavender<br>\$41  |

# Twilight Ice Creams

T

|   |   |  |
|---|---|--|
|  |  |  |
| Strawberry<br>\$94  | Mint<br>\$68  | Mango<br>\$46  |
|  |  |  |
| Vanilla<br>\$72   | Chocolate<br>\$53   | Lavender<br>\$81   |

T

|   |   |   |
|---|---|---|
|  |  |  |
| Strawberry<br>\$94  | Mint<br>\$68  | Mango<br>\$46   |
|  |  |  |
| Vanilla<br>\$72   | Chocolate<br>\$53   | Lavender<br>\$81  |

T

|   |   |  |
|---|---|--|
|   |   |   |
| Strawberry<br>\$94  | Mint<br>\$68  | Mango<br>\$46  |
|  |  |  |
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T

|   |   |   |
|---|---|---|
|   |   |   |
| Strawberry<br>\$94  | Mint<br>\$68  | Mango<br>\$46   |
|  |  |  |
| Vanilla<br>\$72   | Chocolate<br>\$53   | Lavender<br>\$81  |

# Midnight Ice Creams

(M)

|   |   |  |
|---|---|--|
|  |  |  |
| Strawberry<br>\$297   | Mint<br>\$95  | Mango<br>\$86  |
|  |  |  |
| Vanilla<br>\$142  | Chocolate<br>\$73   | Lavender<br>\$263  |

(M)

|   |   |   |
|---|---|---|
|  |  |  |
| Strawberry<br>\$297   | Mint<br>\$95  | Mango<br>\$86   |
|  |  |  |
| Vanilla<br>\$142  | Chocolate<br>\$73   | Lavender<br>\$263   |

(M)

|   |   |  |
|---|---|--|
|   |   |   |
| Strawberry<br>\$297   | Mint<br>\$95  | Mango<br>\$86  |
|  |  |  |
| Vanilla<br>\$142  | Chocolate<br>\$73   | Lavender<br>\$263  |

(M)

|   |   |   |
|---|---|---|
|   |   |   |
| Strawberry<br>\$297   | Mint<br>\$95  | Mango<br>\$86   |
|  |  |  |
| Vanilla<br>\$142  | Chocolate<br>\$73   | Lavender<br>\$263   |

# Guided Prompts (All zones)

I bought the most expensive two scoop combo.



I bought the cheapest two scoop combo.



My two scoop total is the biggest odd number that can be made.



My double scoop total is the smallest odd number that can be made.



My two scoop total is the biggest number that rounds up when rounded to the nearest 10 but rounds down when rounded to the nearest 100.



I bought the most expensive two scoop combo.



I bought the cheapest two scoop combo.



My two scoop total is the biggest odd number that can be made.



My double scoop total is the smallest odd number that can be made.



My two scoop total is the biggest number that rounds up when rounded to the nearest 10 but rounds down when rounded to the nearest 100.



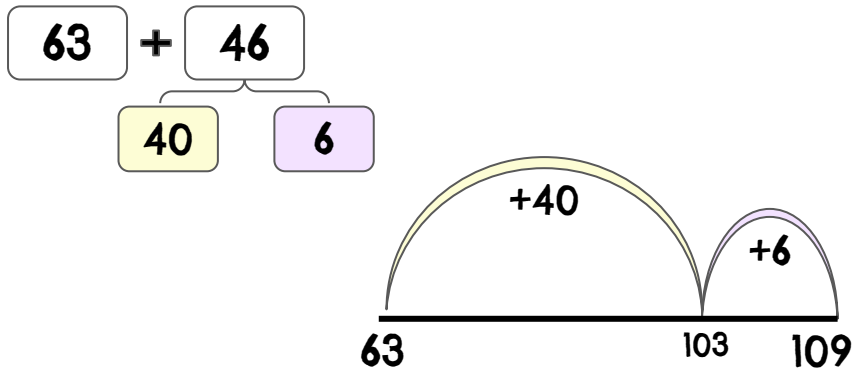
# Recording Logs

| Two Scoop Combo | Number Sentence | Two Scoop Combo | Number Sentence |
|-----------------|-----------------|-----------------|-----------------|
|                 |                 |                 |                 |
|                 |                 |                 |                 |
|                 |                 |                 |                 |
|                 |                 |                 |                 |

# Jump Strategy Thinking Steps

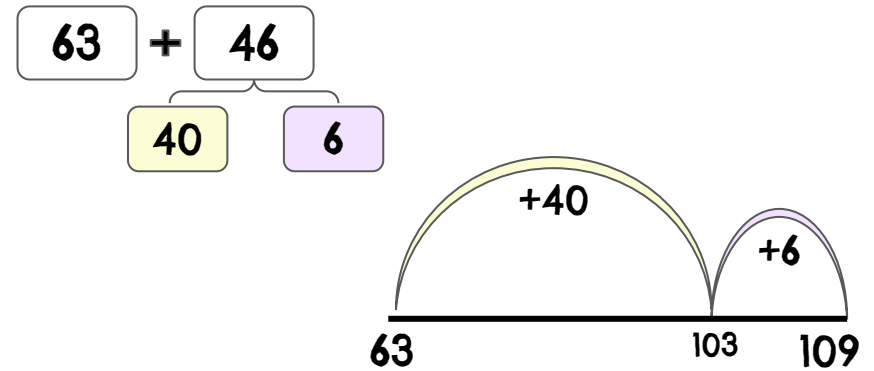
## Jump Strategy Top Tips

1. Expand the smaller number.
2. Put the bigger number at the beginning of the number line and start jumping.
3. What number do you land on?



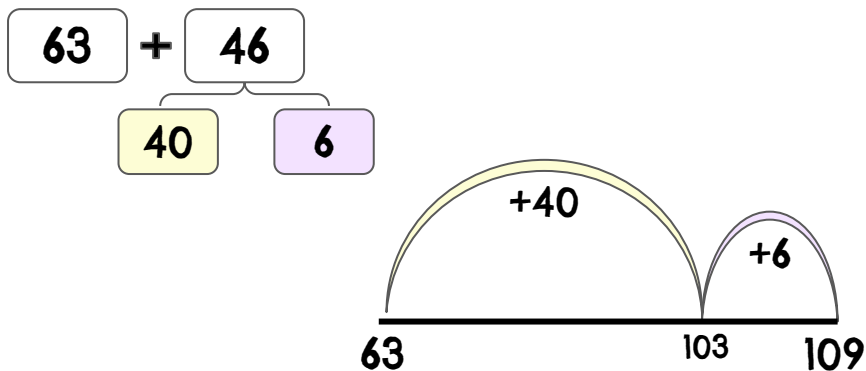
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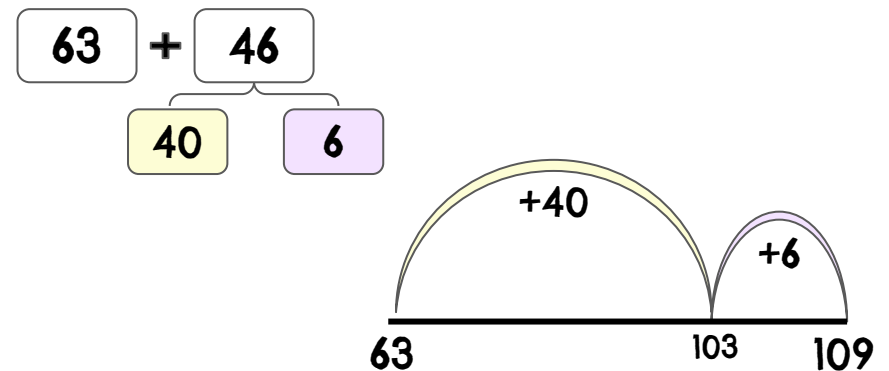
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## Jump Strategy Top Tips

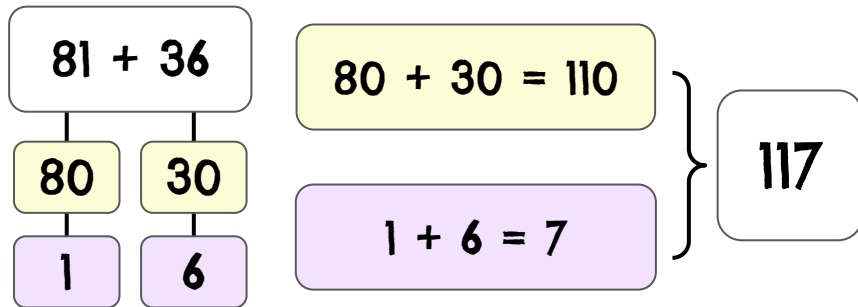
1. Expand the smaller number.
2. Put the bigger number at the beginning of the number line and start jumping.
3. What number do you land on?



# Split Strategy Thinking Steps

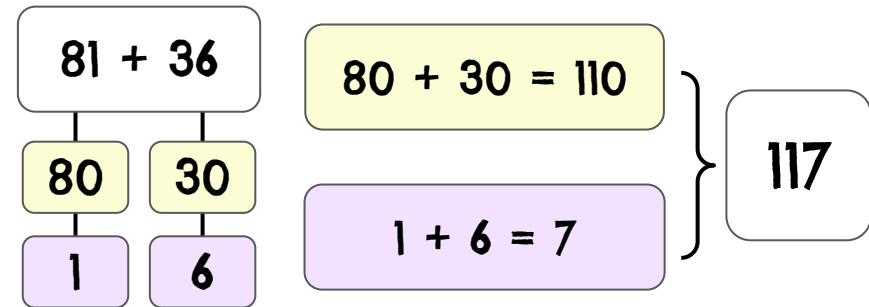
## Split Strategy Top Tips

1. Expand both numbers.
2. Add your place value parts together.
  - tens + tens
  - ones + ones
3. Add your answers together.



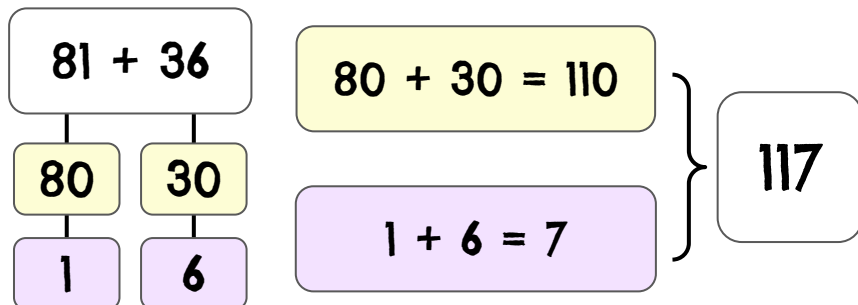
## Split Strategy Top Tips

1. Expand both numbers.
2. Add your place value parts together.
  - tens + tens
  - ones + ones
3. Add your answers together.



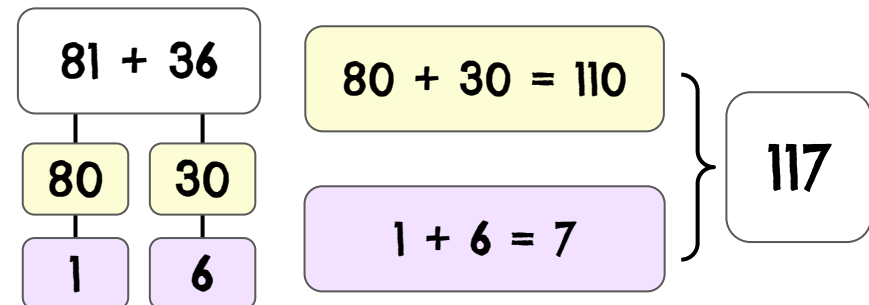
## Split Strategy Top Tips

1. Expand both numbers.
2. Add your place value parts together.
  - tens + tens
  - ones + ones
3. Add your answers together.



## Split Strategy Top Tips

1. Expand both numbers.
2. Add your place value parts together.
  - tens + tens
  - ones + ones
3. Add your answers together.



# Ones Place Value Counters

|   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |

# Tens Place Value Counters

|    |    |    |    |    |    |    |    |
|----|----|----|----|----|----|----|----|
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| 10 | 10 | 10 | 10 | 10 | 10 | 10 | 10 |

# Hundreds Place Value Counters

|     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |
| 100 | 100 | 100 | 100 | 100 | 100 | 100 | 100 |

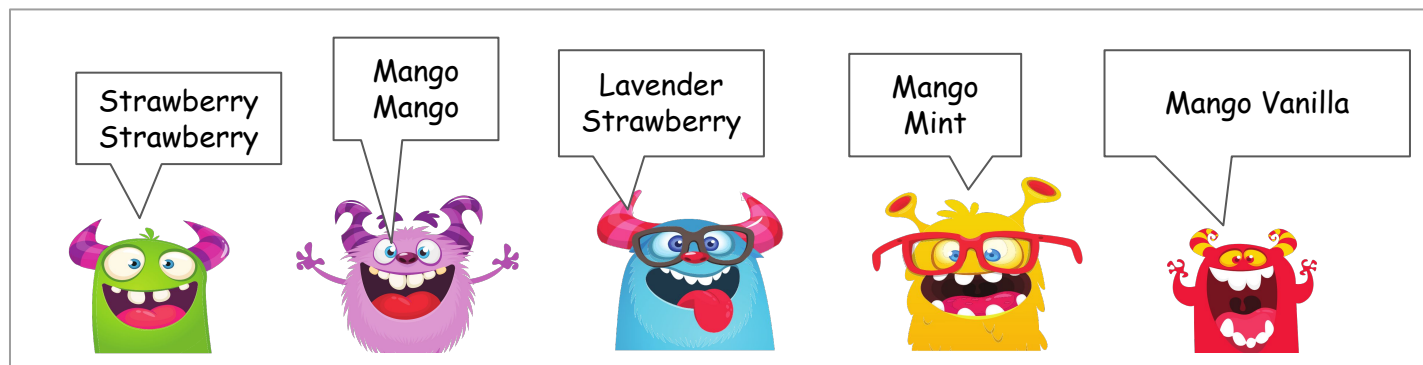
# Sunlight Answers

Answers will vary depending on students' choices.

Below are ice creams in order from most expensive to least expensive as per the Legend challenge.

| Sunlight                                 |      |
|--|------|
| Strawberry Strawberry                    | \$88 |
| Lavender Strawberry                      | \$85 |
| Lavender Lavender                        | \$82 |
| Vanilla Strawberry                       | \$76 |
| Vanilla Lavender                         | \$73 |
| Mint Strawberry                          | \$72 |
| Mint Lavender                            | \$69 |
| Chocolate Strawberry                     | \$67 |
| Vanilla Vanilla or<br>Chocolate Lavender | \$64 |
| Mint Vanilla                             | \$60 |

| Sunlight                       |      |
|--------------------------------|------|
| Mango Strawberry               | \$59 |
| Mango Lavender or<br>Mint Mint | \$56 |
| Chocolate Vanilla              | \$55 |
| Chocolate Mint                 | \$51 |
| Mango Vanilla                  | \$47 |
| Chocolate Chocolate            | \$46 |
| Mango Mint                     | \$43 |
| Mango Chocolate                | \$38 |
| Mango Mango                    | \$30 |



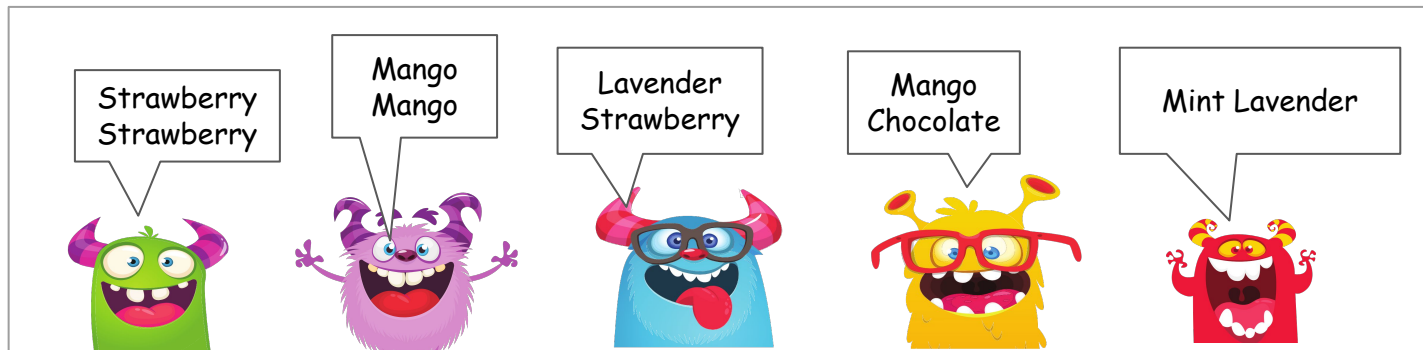
# Twilight Answers

Answers will vary depending on students' choices.

Below are ice creams in order from most expensive to least expensive as per the Legend challenge.

| Twilight                             |       |
|--------------------------------------|-------|
| Strawberry Strawberry                | \$188 |
| Lavender Strawberry                  | \$175 |
| Vanilla Strawberry                   | \$166 |
| Mint Strawberry or Lavender Lavender | \$162 |
| Vanilla Lavender                     | \$153 |
| Mint Lavender                        | \$149 |
| Chocolate Strawberry                 | \$147 |
| Vanilla Vanilla                      | \$144 |
| Mint Vanilla or Mango Strawberry     | \$140 |
| Mint Mint                            | \$136 |

| Twilight            |       |
|---------------------|-------|
| Chocolate Lavender  | \$134 |
| Mango Lavender      | \$127 |
| Chocolate Vanilla   | \$125 |
| Chocolate Mint      | \$121 |
| Mango Vanilla       | \$118 |
| Mango Mint          | \$114 |
| Chocolate Chocolate | \$106 |
| Mango Chocolate     | \$99  |
| Mango Mango         | \$92  |



# Midnight Answers

Answers will vary depending on students' choices.

Below are ice creams in order from most expensive to least expensive as per the Legend challenge.

| Midnight              |       |
|-----------------------|-------|
| Strawberry Strawberry | \$594 |
| Strawberry Lavender   | \$560 |
| Lavender Lavender     | \$526 |
| Strawberry Vanilla    | \$439 |
| Vanilla Lavender      | \$405 |
| Strawberry Mint       | \$392 |
| Mango Strawberry      | \$383 |
| Chocolate Strawberry  | \$370 |
| Mint Lavender         | \$358 |
| Mango Lavender        | \$349 |
| Chocolate Lavender    | \$336 |

| Midnight            |       |
|---------------------|-------|
| Vanilla Vanilla     | \$284 |
| Mint Vanilla        | \$237 |
| Mango Vanilla       | \$228 |
| Chocolate Vanilla   | \$215 |
| Mint Mint           | \$190 |
| Mango Mint          | \$181 |
| Mango Mango         | \$172 |
| Chocolate Mint      | \$168 |
| Mango Chocolate     | \$159 |
| Chocolate Chocolate | \$146 |

