These Questions Can Be Used at Various Times Throughout the Year

This resource comprises five booklets. Each booklet is a compilation of all the questions in a particular strand released between 2012 and 2016. The multiple-choice questions appear first, followed by open-response. The questions are sorted according to the overall expectations in *The Ontario Curriculum, Grades 1–8: Mathematics* to which each is mapped. Detailed information about the questions, such as the year of release, the overall expectation and the category of knowledge and skills the question is mapped to, is listed after them. This detailed information also includes the answer key for each multiple-choice question. The scoring guides (with the item-specific rubric and student samples at each code) for each open-response question follow.
How to Use This Resource

Overall and specific expectations in the primary- and junior-division mathematics curriculum are organized into the five strands. For the sake of consistency, EQAO has also organized this resource by strand. EQAO reports an overall score for each student but does not provide scores by strand, as there are not a sufficient number of assessment questions mapped to each strand to report accurately at that level. The overall difficulty of all the questions on the assessment remains approximately the same from year to year; however, the overall difficulty of questions by strand may vary from year to year.

The questions
• are linked to expectations in The Ontario Curriculum, which forms the basis of the programs of instruction in Ontario classrooms,
• were developed and scored by Ontario teachers and validated through use in provincial testing and
• address various mathematical processes and categories of knowledge and skills in The Ontario Curriculum.

Suggested uses of these booklets:

• Select specific questions by overall expectation based on student learning.
• Use the scoring guides for the open-response questions to assist students in evaluating the reasonableness and completeness of their solutions.
• Use multiple-choice questions as open-response questions, when appropriate, by not including the answer options. Students can answer the question and then discuss the steps required and other possible answers, including those arrived at through common errors. Discuss whether there are multiple methods that can be used to answer the question. Students can then compare their answer to the multiple-choice options. Encourage the students to identify ways to ensure their solution process is complete and the question is answered fully.
• Use technology in the classroom to have students record multiple-choice answers instantly, which will allow for discussion of correct answers and the common errors demonstrated by the incorrect options (along with other errors not included in these options). This discussion can lead to a deeper understanding of concepts and assist students in correcting their own misunderstandings. Another option is to have students start with the correct answer and work backward to formulate a question.
• Encourage students to use manipulatives, and model how to apply them. For example, number lines can be used with questions mapped to expectations in the Number Sense and Numeration strand as well as those mapped to other strands, such as Patterning and Algebra or Data Management and Probability.

Details of the Assessment

EQAO assessments are comparable from year to year, as they share a common structure. The blueprint, which can be found in the Framework, defines how the questions are spread throughout the curriculum. (For more information, see www.eqao.com.) EQAO releases only half of the assessment each year (and has done so since 2013), so the released questions from a particular year do not cover the full blueprint. The blueprint specifies the number and types of questions (multiple-choice or open-response) that are mapped to a particular group of expectations. Each group of expectations can consist of one or more overall expectations, which themselves include specific expectations. Although EQAO releases only the overall expectation, each question is mapped to a specific expectation. The specific expectations vary from year to year; however, some of them involve knowledge or skills that may be assessed every year, or different parts of the expectation can be assessed on a yearly basis.
When specific expectations are repeated, the categories of knowledge and skills the questions are mapped to can change. In the blueprint, some expectations and parts of others are set in italics, which indicates that the italicized element cannot be assessed on a large-scale assessment. EQAO’s aim is for each specific expectation (excluding the ones set completely in italics) to have at least one question mapped to it every five years.

Each question is also mapped to a category of knowledge and skills. EQAO maps multiple-choice questions to the Knowledge and Understanding, Application and Thinking categories. Open-response questions are mapped to either Application or Thinking. EQAO does not map any questions to the category Communication, but teachers can evaluate this skill through any open-response questions where students need to show their work or justify their answer.

There are multiple-choice questions on the primary-division assessment that do not permit students to use a calculator or manipulatives when answering them. These questions are mapped only to certain expectations in the Number Sense and Numeration and the Patterning and Algebra strands and can be found at the beginning of these booklets.

### EQAO’s Definitions of the Categories of Knowledge and Skills

EQAO has adapted the definitions of the categories of knowledge and skills from the achievement chart found in *The Ontario Curriculum*. These definitions assist EQAO in mapping questions.

A question is mapped to the category of Knowledge and Understanding if students must demonstrate only subject-specific content (knowledge) or comprehension of its meaning and significance (understanding), or both, in order to answer the question. These questions assess basic knowledge or understanding of concepts.

A question is mapped to the category Application if students must select the appropriate tool or get the necessary information and “fit” it to the problem. A question may change from Knowledge and Understanding to Application if context is added.

Questions that require students either to select and sequence a variety of tools or to demonstrate a critical thinking process (e.g., reasoning) are mapped to the category Thinking. Consider whether students need to make a plan to answer the question. Thinking questions require students to select more than one tool and sequence them (e.g., add first then subtract) or use reasoning to determine the answer. There may be more than one way to answer these questions.
Here are some examples to help distinguish the different categories of knowledge and skills questions are mapped to.

**Example 1:**
When two multiple-choice questions are similar, the answer options can influence the category of knowledge and skills the question is mapped to.

**VERSION 1**
What is 79 + 22?

a 91  
b 101  
c 191  
d 911

**correct answer: b**

**VERSION 2**
Which of these expressions represents the answer to 79 + 22?

a 70 + 20 + 11  
b 70 + 20 + 1  
c 90 + 2  
d 90 + 7

**correct answer: a**

**Example 2:**
When the answer options are similar, the question can be changed to influence the category of knowledge and skills.

**VERSION 1**
Which number pattern shows adding 5 each time?

a 9, 14, 19, 24, 29,…  
b 9, 13, 17, 21, 25,…  
c 37, 32, 27, 22, 17,…  
d 37, 33, 29, 25, 21,…

**correct answer: a**

**VERSION 1**
Version 1 is mapped to the category **Knowledge and Understanding**. Students need to look at the options and determine if the numbers are increasing by 5 each time. They are provided the tool (adding 5 each time). Students are also given the number patterns.
Example 2 (continued)

VERSION 2a

Three numbers are missing in this pattern. The pattern is increasing by the same amount each time. What are the three missing numbers?

9, 14, 19, __, __, __, 39

a 20, 21, 22
b 24, 34, 44
c 24, 29, 34
d 29, 39, 49

VERSION 2b

This pattern is increasing by the same amount each time.

19, 24, 29, 34, 39,…

What are the next two terms of this pattern?

a 41, 43
b 44, 49
c 44, 54
d 49, 59

VERSION 3

Ivy writes the first five numbers of her pattern:

25, 27, 29, 31, 33,…

Her pattern continues to increase by the same amount each time.

Corey writes the first five numbers of his pattern:

1, 8, 15, 22, 29,…

His pattern continues to increase by the same amount each time.

What number is in both of their patterns?

a 35
b 36
c 37
d 43

VERSION 2a and 2b

Versions 2a and 2b are mapped to the category Application. In both versions, the pattern rule is not given, and students are required to determine the amount by which the pattern is increasing. Students can determine the missing numbers and then find them in the options, or they can try each option and see which one works in the pattern.

(correct answer for version 2a: c)
(correct answer for version 2b: b)

VERSION 3

This version requires a plan. Students must first determine the amount each pattern is increasing by and then extend the pattern using the appropriate pattern rule. After, the student must identify a number common to both patterns. If there is no common number, they will need to extend one or both patterns further. This question is mapped to the category Thinking.

(correct answer: d)
Example 3:

Multiple-choice and open-response questions can be mapped to the category of **Thinking**.

**VERSION 1**

This multiple-choice question is mapped to the category **Thinking**. Students need to make a plan or use reasoning to answer this multiple-choice question. They need to determine how the shape can be used to cover the grid. They can draw the shape onto the grid or count the number of squares and determine the number of groups of 3 in the total.

(correct answer: b)

**VERSION 2**

This open-response question is also mapped to the category **Thinking**. Students need to make a plan. They need to determine the area of each playground and then determine the difference between the two. Students can also cross off one block in each playground at a time and determine the number of blocks left over (not crossed out) on Playground A. Work must be shown to demonstrate how the student determined their answer.

Refer to question 26 in the Measurement strand booklet for samples of student responses with annotations.
Examples of questions

Number Sense and Numeration

Primary Division

Grade 3

Multiple-Choice and Open-Response Questions

INSTRUCTIONS

Answering Multiple-Choice Questions

Like this: ● Not like this: ✗ ✓ ☐ ☐

• Use a pencil only.
• Fill only one circle for each question.
• Fill the circle completely.
• Cleanly erase any answer you wish to change.

Answering Open-Response Questions

• Write on the space provided in this booklet.
1. On Monday, Charlene is given the coins shown below.
   ![Coins]
   On Tuesday, Charlene is given the same amount of money.
   How much money is she given in total over the two days?
   - $1.65
   - $1.70
   - $3.20
   - $3.30

2. Which of the following shows counting forward by 25?
   - 575, 600, 625, 650
   - 325, 425, 525, 625
   - 125, 250, 375, 500
   - 50, 75, 125, 150

3. Sara has $27 in a jar. She adds $2 to the jar every week.
   How much money will she have in the jar in 6 weeks?
   - $29
   - $37
   - $39
   - $41
4. Look at the pattern below.
   92, 90, 88, ___, 84, 82, ___
Which numbers are missing from this pattern?
   ● 87, 81
   ● 87, 80
   ● 86, 81
   ● 86, 80

5. What is 79 + 22?
   ○ 91
   ○ 101
   ○ 191
   ○ 911

6. Tony is reading a book that has 182 pages. He has 143 pages left to read.
   How many pages has he read?
   ○ 39
   ○ 41
   ○ 45
   ○ 49

7. Brock has 112 trading cards. His brother gives him 108 more. Brock then gives away 130 cards to a friend.
   How many trading cards does Brock have left?
   ○ 350
   ○ 110
   ○ 90
   ○ 80

8. Steve has 48 stickers and Sam has 34 stickers.
   Which is closest to the number of stickers they have altogether?
   ○ 90
   ○ 80
   ○ 70
   ○ 50
9 Petra reads 22 books in October and 39 books in November. Which estimate is closest to the total number of books Petra reads during these months?
- 40
- 50
- 60
- 70

10 A store has 7 tricycles. How many wheels in total are on these 7 tricycles?
- 3
- 7
- 14
- 21

11 Which of the following does not have the same value as $3 \times 4$?
- $2 \times 6$
- $3 \times 2$
- $4 \times 3$
- $6 \times 2$

12 What is $24 \div 6$?
- 3
- 4
- 18
- 30
13. What numbers go in the boxes, in order, to make this diagram correct?

Start

- $\div 4$
- $\times 2$
- $\times 6$
- $\div 3$

Options:
- 3, 1, 6
- 3, 9, 54
- 12, 3, 18
- 12, 4, 24
You may now use a calculator and/or manipulatives.
14. Which set of numbers is listed in order from smallest to largest?
- 479, 794, 749
- 974, 794, 749
- 479, 749, 794
- 974, 749, 794

15. Look at the chart below.

<table>
<thead>
<tr>
<th>Number</th>
<th>Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>76</td>
<td>Seventy-six</td>
</tr>
<tr>
<td>79</td>
<td>Seven-nine</td>
</tr>
<tr>
<td>93</td>
<td>Ninety-three</td>
</tr>
<tr>
<td>96</td>
<td>Nine-sixty</td>
</tr>
</tbody>
</table>

Which numbers are written correctly in words?
- 76 and 93
- 76 and 96
- 79 and 93
- 93 and 96

16. What value does the 2 represent in the number 729?
- 2 ones
- 2 tens
- 2 hundreds
- 2 thousands
Adam has the money shown below.

He wants to buy a book that costs $8.00.

Which of the following sets of coins represents the amount of money Adam still needs to buy the book?
18 Popsicle sticks are packaged in boxes of 500.

Meagan needs 100 popsicle sticks to build 1 tower. She has 2 boxes of popsicle sticks.

How many towers can she build using all of the popsicle sticks?

- 5
- 10
- 100
- 200

19 Look at the set of base-ten blocks pictured below.

Which of the following sets of base-ten blocks combines with this set to represent 581?
20 Omar buys a box of pencil crayons for $1.05 and a box of markers for $3.27.

Which set of coins shows exactly how much Omar needs to buy both items?

- [ ] 
- [ ] 
- [ ] 
- [ ]

21 Karen uses the money shown below to buy crayons.

She is given 2 dimes in change. How much do the crayons cost?

- [ ] $4.30
- [ ] $4.40
- [ ] $4.50
- [ ] $4.70
There are 24 students in Mrs. Lowe’s Grade 3 class. She divides the class into 4 equal groups.

Make a drawing to show the 24 students divided into 4 equal groups.

One of these groups goes to the library.

What fraction of the groups goes to the library?

Justify your answer.

The fraction of the groups that goes to the library is

______________________________________________.
Abdul has the 7 coins shown below.

Cindy has fewer than 7 coins.  
Sanjeet has more than 7 coins.  
Cindy and Sanjeet have the same amount of money as Abdul.  
Use the chart below to show the coins that Cindy and Sanjeet could have.

<table>
<thead>
<tr>
<th>Cindy's coins (fewer than 7)</th>
<th>Sanjeet's coins (more than 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>


A collection of coins is shown below.

Represent this amount of money using the smallest possible number of coins and bills.

Show your work.
Some students at Tree Glen Public School collect items for recycling. Information about the number of items the girls and boys collect in 2 days is shown in the chart below.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of items for the girls</th>
<th>Number of items for the boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Tuesday</td>
<td>11</td>
<td>?</td>
</tr>
</tbody>
</table>

The girls and boys collect a total of 50 items over the 2 days. Determine the number of items the boys collect on Tuesday. Show your work.

The boys collect ________ items on Tuesday.
There are 3 bins of books in a classroom. The number of books in each bin is shown in the picture below.

Kyle takes all the books out of the bins and puts them into piles of 10. How many piles of 10 can Kyle make with all the books? Justify your answer.

Kyle can make _______ piles of 10 books.
Kathy and Michael go to a craft store to buy paint and brushes. One bottle of paint costs $5, and 1 brush costs $3.

Kathy buys 1 bottle of paint and 4 brushes.
Michael buys 2 bottles of paint and 1 brush.

How much more money does Kathy spend than Michael?
Show your work.

Kathy spends __________ more than Michael.
## Detailed Information About the Questions

### Number Sense and Numeration

#### Multiple-Choice Questions

<table>
<thead>
<tr>
<th>QUESTION NUMBER</th>
<th>YEAR QUESTION RELEASED</th>
<th>OVERALL EXPECTATION*</th>
<th>COGNITIVE SKILL</th>
<th>KEY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2013</td>
<td>1</td>
<td>TH</td>
<td>d</td>
</tr>
<tr>
<td>2</td>
<td>2013</td>
<td>2</td>
<td>AP</td>
<td>a</td>
</tr>
<tr>
<td>3</td>
<td>2015</td>
<td>2</td>
<td>AP</td>
<td>c</td>
</tr>
<tr>
<td>4</td>
<td>2012</td>
<td>2</td>
<td>AP</td>
<td>d</td>
</tr>
<tr>
<td>5</td>
<td>2016</td>
<td>3</td>
<td>KU</td>
<td>b</td>
</tr>
<tr>
<td>6</td>
<td>2014</td>
<td>3</td>
<td>AP</td>
<td>a</td>
</tr>
<tr>
<td>7</td>
<td>2016</td>
<td>3</td>
<td>TH</td>
<td>c</td>
</tr>
<tr>
<td>8</td>
<td>2012</td>
<td>3</td>
<td>AP</td>
<td>b</td>
</tr>
<tr>
<td>9</td>
<td>2016</td>
<td>3</td>
<td>AP</td>
<td>c</td>
</tr>
<tr>
<td>10</td>
<td>2014</td>
<td>3</td>
<td>AP</td>
<td>d</td>
</tr>
<tr>
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<td>2012</td>
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<td>b</td>
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<td>AP</td>
<td>d</td>
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<td>1</td>
<td>TH</td>
<td>a</td>
</tr>
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<td>2012</td>
<td>1</td>
<td>TH</td>
<td>b</td>
</tr>
<tr>
<td>19</td>
<td>2012</td>
<td>3</td>
<td>TH</td>
<td>a</td>
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<tr>
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<td>2012</td>
<td>3</td>
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<td>c</td>
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<tr>
<td>21</td>
<td>2014</td>
<td>3</td>
<td>TH</td>
<td>a</td>
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</tbody>
</table>

#### Open-Response Questions

<table>
<thead>
<tr>
<th>QUESTION NUMBER</th>
<th>YEAR QUESTION RELEASED</th>
<th>OVERALL EXPECTATION*</th>
<th>COGNITIVE SKILL</th>
</tr>
</thead>
<tbody>
<tr>
<td>22</td>
<td>2016</td>
<td>1</td>
<td>AP</td>
</tr>
<tr>
<td>23</td>
<td>2012</td>
<td>1</td>
<td>AP</td>
</tr>
<tr>
<td>24</td>
<td>2014</td>
<td>1</td>
<td>AP</td>
</tr>
<tr>
<td>25</td>
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<td>26</td>
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<td>3</td>
<td>TH</td>
</tr>
<tr>
<td>27</td>
<td>2013</td>
<td>3</td>
<td>TH</td>
</tr>
</tbody>
</table>

**Legend**

- **Cognitive Skill**
  - KU | Knowledge and Understanding
  - AP | Application
  - TH | Thinking

*This is the number of the overall expectation in the Number Sense and Numeration strand that the question is mapped to. The overall expectations are numbered according to the order in which they appear in The Ontario Curriculum.*
Item-specific rubrics and sample student responses with annotations

QUESTIONS 22 TO 27
## Question 22

<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>• Blank: nothing written or drawn in response to the question</td>
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</tbody>
</table>
| I    | • Illegible: cannot be read; completely crossed out/erased; not written in English  
• Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”; “I don’t know”)  
• Off topic: no relationship of written work to the question |
| 10   | Application of knowledge and skills to determine the fraction of the groups that go to the library shows limited effectiveness due to  
• misunderstanding of concepts  
• incorrect selection or misuse of procedures |
| 20   | Application of knowledge and skills to determine the fraction of the groups that go to the library shows some effectiveness due to  
• partial understanding of the concepts  
• errors and/or omissions in the application of the procedures |
| 30   | Application of knowledge and skills to determine the fraction of the groups that go to the library shows considerable effectiveness due to  
• an understanding of most of the concepts  
• minor errors and/or omissions in the application of the procedures |
| 40   | Application of knowledge and skills to determine the fraction of the groups that go to the library shows a high degree of effectiveness due to  
• a thorough understanding of the concepts  
• an accurate application of the procedures (any minor errors and/or omissions do not detract from the demonstration of a thorough understanding) |
There are 24 students in Mrs. Lowe’s Grade 3 class. She divides the class into 4 equal groups.

Make a drawing to show the 24 students divided into 4 equal groups.

One of these groups goes to the library.

What fraction of the groups goes to the library?

Justify your answer.

The fraction of the groups that goes to the library is

______        ______

Annotation: Response demonstrates misunderstanding of concepts; incorrect drawing (6 groups of 4) with no fraction or justification.
There are 24 students in Mrs. Lowe’s Grade 3 class. She divides the class into 4 equal groups.

Make a drawing to show the 24 students divided into 4 equal groups.

One of these groups goes to the library.

What fraction of the groups goes to the library?

Justify your answer.

The fraction of the groups that goes to the library is

Annotation:
Response demonstrates errors and omissions in the application of the procedures; incorrect drawing (6 groups of 4), but fraction ($\frac{1}{6}$) correct based on error. No justification shown. Note: based on the curriculum, students in Grade 3 are only required to use fractional names (e.g., one sixth), not standard fractional notation ($\frac{1}{6}$). Both are scored the same way. This anchor was selected as many students did use standard fractional notation.
There are 24 students in Mrs. Lowe’s Grade 3 class. She divides the class into 4 equal groups.

Make a drawing to show the 24 students divided into 4 equal groups.

One of these groups goes to the library.
What fraction of the groups goes to the library?
Justify your answer.

\[
\frac{1}{4}
\]

The fraction of the groups that goes to the library is \(\frac{1}{4}\).

**Annotation:**
Response demonstrates minor omissions in the application of the procedures; appropriate drawing (4 groups of 6) and correct fraction \(\frac{1}{4}\), but no justification. Note: based on the curriculum, students in Grade 3 are only required to use fractional names (e.g., one quarter or one fourth), not standard fractional notation \(\frac{1}{4}\). Both are scored the same way. This anchor was selected as many students did use standard fractional notation.
There are 24 students in Mrs. Lowe’s Grade 3 class. She divides the class into 4 equal groups.

Make a drawing to show the 24 students divided into 4 equal groups.

One of these groups goes to the library.

What fraction of the groups goes to the library?

Justify your answer.

\[ \frac{1}{4} \]

The fraction of the groups that goes to the library is \( \frac{1}{4} \).

**Annotation:**
Response demonstrates a thorough understanding of the concepts; appropriate drawing (4 groups of 6) and correct fraction (\( \frac{1}{4} \)) with justification (drawing shows 1 group out of 4 leaving). Note: based on the curriculum, students in Grade 3 are only required to use fractional names (e.g., one quarter or one fourth), not standard fractional notation (\( \frac{1}{4} \)). Both are scored the same way. This anchor was selected as many students did use standard fractional notation.
## Question 23

<table>
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<tr>
<th>Code</th>
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</tr>
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• Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?” , “!” , “I don’t know”)  
• Off topic: no relationship of written work to the question |
| 10   | Application of knowledge and skills to use relationships between values of coins to determine the coins Cindy and Sanjeet could have shows limited effectiveness due to  
• misunderstanding of concepts  
• incorrect selection or misuse of procedures |
| 20   | Application of knowledge and skills to use relationships between values of coins to determine the coins Cindy and Sanjeet could have shows some effectiveness due to  
• partial understanding of the concepts  
• errors and/or omissions in the application of the procedures |
| 30   | Application of knowledge and skills to use relationships between values of coins to determine the coins Cindy and Sanjeet could have shows considerable effectiveness due to  
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• a thorough understanding of the concepts  
• an accurate application of the procedures (any minor errors and/or omissions do not detract from the demonstration of a thorough understanding) |
Abdul has the 7 coins shown below.

Cindy has fewer than 7 coins.
Sanjeet has more than 7 coins.
Cindy and Sanjeet have the same amount of money as Abdul.
Use the chart below to show the coins that Cindy and Sanjeet could have.

<table>
<thead>
<tr>
<th>Cindy's coins (fewer than 7)</th>
<th>Sanjeet's coins (more than 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1</td>
<td>$1</td>
</tr>
<tr>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td>$1</td>
<td>$25</td>
</tr>
<tr>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td>$1</td>
<td>$25</td>
</tr>
<tr>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td>$1</td>
<td>$10</td>
</tr>
</tbody>
</table>

**Annotation:**
Student demonstrates a misunderstanding of concepts; number of coins drawn match each title on the chart but neither total $1.75 nor is total of all coins $1.75.
Abdul has the 7 coins shown below.

Cindy has fewer than 7 coins.
Sanjeet has more than 7 coins.
Cindy and Sanjeet have the same amount of money as Abdul.
Use the chart below to show the coins that Cindy and Sanjeet could have.

<table>
<thead>
<tr>
<th>Cindy's coins (fewer than 7)</th>
<th>Sanjeet's coins (more than 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 25</td>
<td>25 25 25</td>
</tr>
<tr>
<td>25 25</td>
<td>25 25 25</td>
</tr>
<tr>
<td>1$</td>
<td>2$</td>
</tr>
</tbody>
</table>

**Annotation:**
Response demonstrates errors in the application of the procedures; number of coins drawn match each title on the chart, neither totals $1.75 but totals shown for Cindy and Sanjeet match coins drawn for each.
Question 23

Code 30

Abdul has the 7 coins shown below.

Cindy has fewer than 7 coins.
Sanjeet has more than 7 coins.
Cindy and Sanjeet have the same amount of money as Abdul.
Use the chart below to show the coins that Cindy and Sanjeet could have.

<table>
<thead>
<tr>
<th>Cindy’s coins (fewer than 7)</th>
<th>Sanjeet’s coins (more than 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Cindy’s coins" /></td>
<td><img src="image2" alt="Sanjeet’s coins" /></td>
</tr>
</tbody>
</table>

Annotation:
Response demonstrates minor errors in the application of the procedures; number of coins drawn match each title on the chart and total value represented is $1.75 for Cindy but is not $1.75 for Sanjeet.
Question 23

Code 40

Abdul has the 7 coins shown below.

Cindy has fewer than 7 coins.
Sanjeet has more than 7 coins.
Cindy and Sanjeet have the same amount of money as Abdul.
Use the chart below to show the coins that Cindy and Sanjeet could have.

<table>
<thead>
<tr>
<th>Cindy's coins (fewer than 7)</th>
<th>Sanjeet's coins (more than 7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$1  25</td>
<td>10   10 10 10 10</td>
</tr>
<tr>
<td>25  10</td>
<td>10   10 10 10 5</td>
</tr>
<tr>
<td>25  10 10</td>
<td>25   25 25 25</td>
</tr>
<tr>
<td>5</td>
<td>25   25</td>
</tr>
</tbody>
</table>

Annotation:
Response demonstrates an accurate application of the procedures; number of coins drawn match each title on the chart and value represented for both Cindy and Sanjeet is $1.75 (Note: not necessary that total $1.75 be written).
### Question 24

<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong></td>
<td>• Blank: nothing written or drawn in response to the question</td>
</tr>
</tbody>
</table>
| **I** | • Illegible: cannot be read; completely crossed out/erased; not written in English  
• Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”, “I don’t know”)  
• Off topic: no relationship of written work to the question |
| **10** | Application of knowledge and skills to determine an amount of money and represent it using the smallest number of coins and bills shows limited effectiveness due to  
• misunderstanding of concepts  
• incorrect selection or misuse of procedures |
| **20** | Application of knowledge and skills to determine an amount of money and represent it using the smallest number of coins and bills shows some effectiveness due to  
• partial understanding of the concepts  
• errors and/or omissions in the application of the procedures |
| **30** | Application of knowledge and skills to determine an amount of money and represent it using the smallest number of coins and bills shows considerable effectiveness due to  
• an understanding of most of the concepts  
• minor errors and/or omissions in the application of the procedures |
| **40** | Application of knowledge and skills to determine an amount of money and represent it using the smallest number of coins and bills shows a high degree of effectiveness due to  
• a thorough understanding of the concepts  
• an accurate application of the procedures (any minor errors and/or omissions do not detract from the demonstration of a thorough understanding) |
Question 24

**Code 10**

A collection of coins is shown below.

Represent this amount of money using the smallest possible number of coins and bills.
Show your work.

Annotation:
Response demonstrates misuse of procedures; incorrect total represented ($7.25) with no work shown (total or groupings).
A collection of coins is shown below.

Represent this amount of money using the smallest possible number of coins and bills.
Show your work.

Total 9.25

Annotation:
Response demonstrates errors in the application of the procedures; $9.25 shown (instead of $8.25) and represented correctly but not using the smallest possible number of coins and bills.
Question 24

Code 30

Annotation:
Response demonstrates a minor error in the application of the procedures; $8.25 shown and represented but not using the smallest possible number of coins and bills.
A collection of coins is shown below.

Represent this amount of money using the smallest possible number of coins and bills.

Show your work. The amount is $8.25.

$5 $2 $1 $0.25

**Annotation:**
Response demonstrates an accurate application of the procedures; $8.25 shown and represented using the smallest possible number of coins and bills. Incorrect units (8.25¢) does not detract from the demonstration of a thorough understanding.
**Question 25**

<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>· Blank: nothing written or drawn in response to the question</td>
</tr>
</tbody>
</table>
| I    | · Illegible: cannot be read; completely crossed out/erased; not written in English  
   · Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”, “!”, “I don’t know”)  
   · Off topic: no relationship of written work to the question |
| 10   | Thinking process to add and subtract two-digit numbers and determine the number of items the boys collected shows limited effectiveness due to  
   · minimal evidence of a solution process  
   · limited identification of important elements of the problem  
   · too much emphasis on unimportant elements of the problem  
   · no conclusions presented  
   · conclusion presented without supporting evidence |
| 20   | Thinking process to add and subtract two-digit numbers and determine the number of items the boys collected shows some effectiveness due to  
   · an incomplete solution process  
   · identification of some of the important elements of the problem  
   · some understanding of the relationships between important elements of the problem  
   · simple conclusions with little supporting evidence |
| 30   | Thinking process to add and subtract two-digit numbers and determine the number of items the boys collected shows considerable effectiveness due to  
   · a solution process that is nearly complete  
   · identification of most of the important elements of the problem  
   · a considerable understanding of the relationships between important elements of the problem  
   · appropriate conclusions with supporting evidence |
| 40   | Thinking process to add and subtract two-digit numbers and determine the number of items the boys collected shows a high degree of effectiveness due to  
   · a complete solution process  
   · identification of all important elements of the problem  
   · a thorough understanding of the relationships between all of the important elements of the problem  
   · appropriate conclusions with thorough and insightful supporting evidence |
Some students at Tree Glen Public School collect items for recycling.

Information about the number of items the girls and boys collect in 2 days is shown in the chart below.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of Items for the girls</th>
<th>Number of Items for the boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Tuesday</td>
<td>11</td>
<td>?</td>
</tr>
</tbody>
</table>

The girls and boys collect a total of 50 items over the 2 days.

Determine the number of items the boys collect on Tuesday.

Show your work.

\[19 + 50 = 69\]

The boys collect 69 items on Tuesday.

**Annotation:**
Response demonstrates minimal evidence of a solution process; total number of items given not determined and adds the number of items the boys collected on Monday (19) to the total number of items.
Some students at Tree Glen Public School collect items for recycling.
Information about the number of items the girls and boys collect in 2 days is shown in the chart below.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of items for the girls</th>
<th>Number of items for the boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Tuesday</td>
<td>11</td>
<td>?</td>
</tr>
</tbody>
</table>

The girls and boys collect a total of 50 items over the 2 days. Determine the number of items the boys collect on Tuesday. Show your work.

\[ 16 + 11 = \underline{27} \]

The boys collect \(46\) items on Tuesday.

**Annotation:**
Response demonstrates an incomplete solution process; correctly determines the total number of items given (46) but the number of items needed to reach 50 (4) is not determined.
Some students at Tree Glen Public School collect items for recycling. Information about the number of items the girls and boys collect in 2 days is shown in the chart below.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of Items for the girls</th>
<th>Number of Items for the boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Tuesday</td>
<td>11</td>
<td>?</td>
</tr>
</tbody>
</table>

The girls and boys collect a total of 50 items over the 2 days. Determine the number of items the boys collect on Tuesday. Show your work.

\[
\begin{align*}
11 & \quad 27 \\
+16 & \quad +19 \\
\hline
37 & \quad 46
\end{align*}
\]

The boys collect 5 items on Tuesday.

**Annotation:**
Response demonstrates a considerable understanding of the relationships between important elements of the problem; correctly determines the total number of items given (46) but minor calculation error (5) in determining the number of items needed to reach 50.
Some students at Tree Glen Public School collect items for recycling. Information about the number of items the girls and boys collect in 2 days is shown in the chart below.

<table>
<thead>
<tr>
<th>Day</th>
<th>Number of Items for the girls</th>
<th>Number of Items for the boys</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Tuesday</td>
<td>11</td>
<td>?</td>
</tr>
</tbody>
</table>

The girls and boys collect a total of 50 items over the 2 days. Determine the number of items the boys collect on Tuesday. Show your work.

\[
\begin{align*}
19 & \quad \begin{array}{c}
35 \\
+16 & +11 + 4 \\
\hline
35 & 46 \\
\end{array} \\
\hline
46 & 50
\end{align*}
\]

The boys collect 4 items on Tuesday.

**Annotation:**
Response demonstrates a complete solution process; correctly determines the total number of items given (46) and the number of items needed to reach 50 (4).
Question 26

<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>Blank: nothing written or drawn in response to the question</td>
</tr>
</tbody>
</table>
| I    | Illegible: cannot be read; completely crossed out/erased; not written in English  
|      | Irrelevant content: does not attempt assigned question  
|      | (e.g., comment on the task, drawings, “?”, “!”; “I don’t know”)  
|      | Off topic: no relationship of written work to the question |
| 10   | Problem-solving process to determine how many piles of 10 books Kyle can make shows limited effectiveness due to  
|      | minimal evidence of a solution process  
|      | limited identification of important elements of the problem  
|      | too much emphasis on unimportant elements of the problem  
|      | no conclusions presented  
|      | conclusion presented without supporting evidence |
| 20   | Problem-solving process to determine how many piles of 10 books Kyle can make shows some effectiveness due to  
|      | an incomplete solution process  
|      | identification of some of the important elements of the problem  
|      | some understanding of the relationships between important elements of the problem  
|      | simple conclusions with little supporting evidence |
| 30   | Problem-solving process to determine how many piles of 10 books Kyle can make shows considerable effectiveness due to  
|      | a solution process that is nearly complete  
|      | identification of most of the important elements of the problem  
|      | a considerable understanding of the relationships between important elements of the problem  
|      | appropriate conclusions with supporting evidence |
| 40   | Problem-solving process to determine how many piles of 10 books Kyle can make shows a high degree of effectiveness due to  
|      | a complete solution process  
|      | identification of all important elements of the problem  
|      | a thorough understanding of the relationships between all of the important elements of the problem  
|      | appropriate conclusions with thorough and insightful supporting evidence |
Question 26

There are 3 bins of books in a classroom. The number of books in each bin is shown in the picture below.

\[
\begin{array}{ccc}
23 & 37 & 56 \\
\end{array}
\]

Kyle takes all the books out of the bins and puts them into piles of 10.
How many piles of 10 can Kyle make with all the books?
Justify your answer.

Kyle made 9 piles of books and 7 extra

Kyle can make _____ piles of 10 books.

Annotation:
Response demonstrates minimal evidence of a solution process; shows 9 groupings of 10 with statement, “Kyle made 9 piles of books and 7 extra” with no evidence to support 9 piles.
Question 26

There are 3 bins of books in a classroom. The number of books in each bin is shown in the picture below.

![Bins with numbers 23, 37, and 56](image)

Kyle takes all the books out of the bins and puts them into piles of 10. How many piles of 10 can Kyle make with all the books? Justify your answer.

2 tens 3 tens 5 tens

Kyle can make 70 piles of 10 books.

Annotation:
Response demonstrates an incomplete solution process; the number of tens from each bin are shown but omits the extra books with an incorrect answer of 10 piles.
There are 3 bins of books in a classroom. The number of books in each bin is shown in the picture below.

- Bin 1: 23 books
- Bin 2: 37 books
- Bin 3: 56 books

Kyle takes all the books out of the bins and puts them into piles of 10. How many piles of 10 can Kyle make with all the books? 5 groups of 10

Fraction left over: \( \frac{1}{10} \) groups of 10

3 groups of 10

2 groups of 10

Kyle can make \( \frac{10}{10} \) piles of 10 books.

**Annotation:**
Response demonstrates a solution process that is nearly complete; shows the number of tens from each bin and tallies for the ones (16 tallies) but with an incorrect answer of 10 piles.
There are 3 bins of books in a classroom. The number of books in each bin is shown in the picture below.

Kyle takes all the books out of the bins and puts them into piles of 10.
How many piles of 10 can Kyle make with all the books?
Justify your answer.

23 + 37 = 60
60
+ 56
116

Kyle can make _1_ piles of 10 books.

Annotation:
Response demonstrates a complete solution process; the number of books in each bin are added to total 116 with a correct answer of 11 piles (11 piles and 6 lose books).
Question 27

<table>
<thead>
<tr>
<th>Code</th>
<th>Descriptor</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>• Blank: nothing written or drawn in response to the question</td>
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<tr>
<td></td>
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<tr>
<td></td>
<td>• Irrelevant content: does not attempt assigned question (e.g., comment on the task, drawings, “?”,”!”,”I don’t know”)</td>
</tr>
<tr>
<td></td>
<td>• Off topic: no relationship of written work to the question</td>
</tr>
<tr>
<td>10</td>
<td>Thinking process to determine how much more money Kathy spends than Michael shows limited effectiveness due to</td>
</tr>
<tr>
<td></td>
<td>• minimal evidence of a solution process</td>
</tr>
<tr>
<td></td>
<td>• limited identification of important elements of the problem</td>
</tr>
<tr>
<td></td>
<td>• too much emphasis on unimportant elements of the problem</td>
</tr>
<tr>
<td></td>
<td>• no conclusions presented</td>
</tr>
<tr>
<td></td>
<td>• conclusion presented without supporting evidence</td>
</tr>
<tr>
<td>20</td>
<td>Thinking process to determine how much more money Kathy spends than Michael shows some effectiveness due to</td>
</tr>
<tr>
<td></td>
<td>• an incomplete solution process</td>
</tr>
<tr>
<td></td>
<td>• identification of some of the important elements of the problem</td>
</tr>
<tr>
<td></td>
<td>• some understanding of the relationships between important elements of the problem</td>
</tr>
<tr>
<td></td>
<td>• simple conclusions with little supporting evidence</td>
</tr>
<tr>
<td>30</td>
<td>Thinking process to determine how much more money Kathy spends than Michael shows considerable effectiveness due to</td>
</tr>
<tr>
<td></td>
<td>• a solution process that is nearly complete</td>
</tr>
<tr>
<td></td>
<td>• identification of most of the important elements of the problem</td>
</tr>
<tr>
<td></td>
<td>• a considerable understanding of the relationships between important elements of the problem</td>
</tr>
<tr>
<td></td>
<td>• appropriate conclusions with supporting evidence</td>
</tr>
<tr>
<td>40</td>
<td>Thinking process to determine how much more money Kathy spends than Michael shows a high degree of effectiveness due to</td>
</tr>
<tr>
<td></td>
<td>• a complete solution process</td>
</tr>
<tr>
<td></td>
<td>• identification of all important elements of the problem</td>
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</tr>
<tr>
<td></td>
<td>• appropriate conclusions with thorough and insightful supporting evidence</td>
</tr>
</tbody>
</table>
Kathy and Michael go to a craft store to buy paint and brushes. One bottle of paint costs $5, and 1 brush costs $3.
Kathy buys 1 bottle of paint and 4 brushes.
Michael buys 2 bottles of paint and 1 brush.

How much more money does Kathy spend than Michael?
Show your work.

Kathy spent $19 more money than Michael.

Kathy spends _________ more than Michael.

**Annotation:**
Response demonstrates minimal evidence of a solution process; no totals shown for Michael or Kathy and incorrect difference shown with no evidence of how difference was calculated.
Kathy and Michael go to a craft store to buy paint and brushes. One bottle of paint costs $5, and 1 brush costs $3.

Kathy buys 1 bottle of paint and 4 brushes.
Michael buys 2 bottles of paint and 1 brush.

How much more money does Kathy spend than Michael?
Show your work.

Kathy spends $17 more than Michael.

Annotation:
Response demonstrates an incomplete solution process; correct amounts and total shown for Kathy but not for Michael and incorrect difference shown (shows Kathy’s total).
Kathy and Michael go to a craft store to buy paint and brushes. One bottle of paint costs $5, and 1 brush costs $3.

Kathy buys 1 bottle of paint and 4 brushes.
Michael buys 2 bottles of paint and 1 brush.

How much more money does Kathy spend than Michael?
Show your work.

Kathy spends $17 more than Michael.

Annotation:
Response demonstrates a solution process that is nearly complete; correct amounts and totals shown for Michael and Kathy but incorrect difference shown (shows Kathy’s total).
Kathy and Michael go to a craft store to buy paint and brushes. One bottle of paint costs $5, and 1 brush costs $3. Kathy buys 1 bottle of paint and 4 brushes. Michael buys 2 bottles of paint and 1 brush. How much more money does Kathy spend than Michael?

Show your work.

Kathy spent 4 more dollars than Michael because I calculated how much money they spent. Kathy spent 17 dollars and Michael spent 13 dollars.

Kathy spent 4 more dollars than Michael.

Annotation:
Response demonstrates a complete solution process; correct calculations and totals shown for Michael and Kathy and correct difference shown (Kathy spend 4 more dollars than Michael).