

How to use Math's Mate Skill Builders

1. Determine which Math's Mate questions pose a difficulty

If a student gets one or more incorrect answers (represented by one or more successive unshaded boxes) on their worksheet results sheet, provided at the start of each term in the Math's Mate Student Pad, then that question requires a Skill Builder.

For example, question 13 in Sheets 1, 2, 3 and 4 is not marked, so Skill 13.1 from Skill Builder 13 needs to be handed to the student.

Worksheet Results

Term 1

Question	Sheet 1	Sheet 2	Sheet 3	Sheet 4	Sheet 5	Sheet 6	Sheet 7	Sheet 8
1. [+ Whole Numbers to 10]	✓	✓	✓	✓	✓	✓	✓	✓
2. [- Whole Numbers to 10]	✓	✓	✓	✓	✓	✓	✓	✓
3. [× Whole Numbers to 12]	✓	✓	✓	✓	✓	✓	✓	✓
4. [- Whole Numbers to 12]	✓	✓	✓	✓	✓	✓	✓	✓
5. [Large Number +,-]	✓	✓	✓	✓	✓	✓	✓	✓
6. [Large Number ×,-]	✓	✓	✓	✓	✓	✓	✓	✓
7. [Powers of 10 ×,-]	✓	✓	✓	✓	✓	✓	✓	✓
8. [Decimals]	✓	✓	✓	✓	✓	✓	✓	✓
9. [Fractions]	✓	✓	✓	✓	✓	✓	✓	✓
10. [Dec. / Frac. / Percents]	✓	✓	✓	✓	✓	✓	✓	✓
11. [Integers]	✓	✓	✓	✓	✓	✓	✓	✓
12. [Operations]	✓	✓	✓	✓	✓	✓	✓	✓
13. [Place Value]	✗	✗	✗	✗	✓	✓	✓	✓
14. [Patterns / Equations]	✓	✓	✓	✓	✓	✓	✓	✓
15. [Location]	✓	✓	✓	✓	✓	✓	✓	✓
16. [Geometry]	✓	✓	✓	✓	✓	✓	✓	✓
17. [Units of Measurement]	✓	✓	✓	✓	✓	✓	✓	✓
18. [Measuring]	✓	✓	✓	✓	✓	✓	✓	✓
19. [Perimeter / Area / Volume]	✓	✓	✓	✓	✓	✓	✓	✓
20. [Data Analysis]	✓	✓	✓	✓	✓	✓	✓	✓
21. [Probability / Statistics]	✓	✓	✓	✓	✓	✓	✓	✓
22. [Problem Solving 1]	✓	✓	✓	✓	✓	✓	✓	✓
23. [Problem Solving 2]	✓	✓	✓	✓	✓	✓	✓	✓
24. [Problem Solving 3]	✓	✓	✓	✓	✓	✓	✓	✓
Total Correct	20	21	20	22				

2. Find the relevant Skill Builder on the Math's Mate worksheet results sheet

Check across the question that is posing difficulties on the worksheet results sheet to find the list of skills within the Skill Builder that are most relevant to that question.

Obtain a copy of one or all of the skills listed for that question (pages 1 to 192). You can also double check with the grid at the right of each skill title, that the chosen skill is appropriate.

Remember, students should work through the skills in order. The skills, where possible, are arranged in increasing degree of difficulty. Be aware that some skills may require the knowledge of previous skills.

Generally too, when a student has several areas of weakness, they should work on the lowest numbered question first. For example, a student struggling with Q1 and Q11 will need to build skills required for Q1 before they can improve Q11.

13. [Place Value]

Skill 13.1

Underline the digit and underline the place value of a digit in a number.

Place the position of the digit to the position of the decimal point.

Hint: There is a decimal point which is not written, at the end of any whole number.

Place or column	1000s	100s	10s	1s	tenths	hundredths	thousandths
	1	0	2	5	7	6	3

Q. In the number 5893 which of the digits 5, 8, 9 or 3 lies in the hundreds column? **A. 8** The digit three places to the left of the decimal point is in the hundreds place. So 8 is in the hundreds column.

Q. Which digit in 32.95 is in the same place as the 3 in 5.367? **A. 9** The digit 3 is one place to the right of the decimal point. In the number 32.95 the digit one place to the right is 9

a) Name the place of the underlined digit in the number 798. [Hint: Is it units, tens or hundreds?] **units**

b) Name the place of the underlined digit in the number 284. [Hint: Is it units, tens or hundreds?] **hundreds**

c) In the number 5491 which of the digits 5, 4, 9 or 1 lies in the tens place? **9**

d) In the number 42006 which of the digits 4, 2, 0 or 6 lies in the thousands column? **4**

e) In the number 15.26 which of the digits 1, 5, 2 or 6 lies in the hundredths column? **6**

f) In the number 564.2 which of the digits 5, 4, 6 or 2 lies in the units column? **4**

g) Which digit in 6578 is in the same place as the 1 in 415? **5**

h) Which digit in 456.2 is in the same place as the 6 in 63.79? **6**

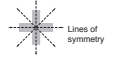
i) Which digit in 4087 is in the same place as the 1 in 165? **7**

j) Which digit in 38.25 is in the same place as the 4 in 1.47? **2**

3. Look up any unknown terms in the Skill Builder glossary

The glossary (pages 193 to 240) is more than just a list of definitions. It contains a wealth of relevant information that may help the students to better understand the question at hand. Weaker students may find that referring to a copy of the glossary, and even building on it, is a helpful strategy for improving their overall mathematical competency.

For example, a student might need to look up the word “tenths” before attempting to complete Skill 13.1

sum	• The result when two or more numbers are added.	The sum of 20 and 6 is 26: $20 + 6 = 6 + 20 = 26$																												
survey	• A method of collecting a <i>sample of data</i> by getting people’s responses.	TV ratings are determined by surveying viewers.																												
symmetry	• A shape has a <i>line of symmetry</i> when a line can be drawn through the shape so that one side of the shape is the mirror image of the other.	There are 3 kinds of symmetry: horizontal symmetry vertical symmetry rotational symmetry 																												
table	• <i>Data organized in columns and rows.</i>	<i>Model Tally - Beijing Olympics 2008</i> <table border="1"> <thead> <tr> <th>COUNTRY</th> <th>Gold</th> <th>Silver</th> <th>Brass</th> </tr> </thead> <tbody> <tr> <td>China</td> <td>51</td> <td>21</td> <td>28</td> </tr> <tr> <td>United States</td> <td>36</td> <td>38</td> <td>38</td> </tr> <tr> <td>Russia</td> <td>23</td> <td>21</td> <td>28</td> </tr> <tr> <td>Great Britain</td> <td>19</td> <td>13</td> <td>15</td> </tr> <tr> <td>Germany</td> <td>10</td> <td>10</td> <td>15</td> </tr> <tr> <td>Australia</td> <td>14</td> <td>15</td> <td>17</td> </tr> </tbody> </table>	COUNTRY	Gold	Silver	Brass	China	51	21	28	United States	36	38	38	Russia	23	21	28	Great Britain	19	13	15	Germany	10	10	15	Australia	14	15	17
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tax	• A financial charge imposed by the state often calculated as a <i>percent</i> .	If a sales tax of 6% is applied on a purchase of \$100, the total amount that must be paid is \$106.																												
temperature	• How hot or cold a thing is. • Temperature is measured in <i>degrees Fahrenheit (°F)</i> or <i>degrees Celsius (°C)</i> with a <i>thermometer</i> .	212°F is the temperature at which water boils.																												
tens	• The <i>place value</i> between the <i>units</i> and <i>hundreds</i> .	1825.763 has 2 tens. <table border="1"> <tr> <td>thousands</td> <td>hundreds</td> <td>tens</td> <td>units</td> <td>tenths</td> <td>hundredths</td> <td>thousandths</td> </tr> <tr> <td>1</td> <td>8</td> <td>2</td> <td>5</td> <td>7</td> <td>6</td> <td>3</td> </tr> </table>	thousands	hundreds	tens	units	tenths	hundredths	thousandths	1	8	2	5	7	6	3														
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tenths	• The <i>place value</i> after the decimal point between the <i>units</i> and <i>hundredths</i> .	1825.763 has 7 tenths. <table border="1"> <tr> <td>thousands</td> <td>hundreds</td> <td>tens</td> <td>units</td> <td>tenths</td> <td>hundredths</td> <td>thousandths</td> </tr> <tr> <td>1</td> <td>8</td> <td>2</td> <td>5</td> <td>7</td> <td>6</td> <td>3</td> </tr> </table>	thousands	hundreds	tens	units	tenths	hundredths	thousandths	1	8	2	5	7	6	3														
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4. Complete the relevant Skill Builder

Work through the examples given for that skill, and complete the exercises.

There are many techniques or methods that can be used to teach the same basic skills, even something as simple as adding 7 and 9. It is good for a student to be given a range of alternatives appropriate for each skill but space restrictions make this impossible. These sheets often suggest an approach that may be different to a student’s past experience. If a student feels more comfortable with his current technique, that is fine. In most cases it is the end result that counts.

It is possible to take a very weak student back to a Skill Builder from a lower level if this is necessary. It is also possible to use a higher level book for students to have further practice if required.

5. Correct the relevant Skill Builders from the Skill Builder answer sheets (from page 383)

6. Circle the completed skill numbers on the Math’s Mate worksheet results sheet

SKILL BUILDER'S TEST	7. [Powers of 10 \times , \div]	<table border="1"><tr><td>7</td><td>7</td><td>7</td><td>7</td></tr><tr><td>8</td><td>8</td><td>8</td><td>8</td></tr><tr><td>9</td><td>9</td><td>9</td><td>9</td></tr><tr><td>10</td><td>10</td><td>10</td><td>10</td></tr><tr><td>11</td><td>11</td><td>11</td><td>11</td></tr><tr><td>12</td><td>12</td><td>12</td><td>12</td></tr><tr><td>13</td><td>13</td><td>13</td><td>13</td></tr><tr><td>14</td><td>14</td><td>14</td><td>14</td></tr><tr><td>15</td><td>15</td><td>15</td><td>15</td></tr><tr><td>16</td><td>16</td><td>16</td><td>16</td></tr></table>	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16	16	16	16	7.1,2	<table border="1"><tr><td>7</td><td>7</td><td>7</td><td>7</td></tr><tr><td>8</td><td>8</td><td>8</td><td>8</td></tr><tr><td>9</td><td>9</td><td>9</td><td>9</td></tr><tr><td>10</td><td>10</td><td>10</td><td>10</td></tr><tr><td>11</td><td>11</td><td>11</td><td>11</td></tr><tr><td>12</td><td>12</td><td>12</td><td>12</td></tr><tr><td>13</td><td>13</td><td>13</td><td>13</td></tr><tr><td>14</td><td>14</td><td>14</td><td>14</td></tr><tr><td>15</td><td>15</td><td>15</td><td>15</td></tr><tr><td>16</td><td>16</td><td>16</td><td>16</td></tr></table>	7	7	7	7	8	8	8	8	9	9	9	9	10	10	10	10	11	11	11	11	12	12	12	12	13	13	13	13	14	14	14	14	15	15	15	15	16	16	16	16	7.3,4
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16. [Geometry]	16.1	16.2																																																																																			

7. Go back and repeat previous Math’s Mate questions

After completing a Skill Builder, students should be encouraged to go back and attempt again those particular questions on the recently completed Math’s Mate sheets.