

# LETTER HOME

## Repeating and Growing Patterns

Dear Family Member:

Patterns surround us. We find patterns in our daily schedules, in the music we enjoy, and even in the tiles of the kitchen floor. Recognizing and working with patterns is an important part of mathematics.

Over the next few weeks, your child will strengthen his or her problem-solving skills by identifying and building patterns. For example, your child will use his or her name to complete a name grid and look for patterns in the grid. Students will also identify number patterns such as even and odd numbers and describe the patterns on a 100 Chart and on a number line.

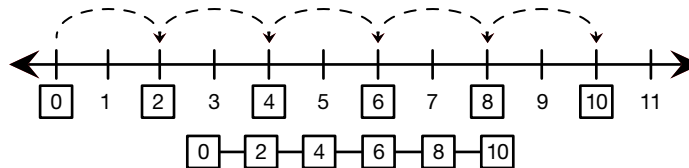
As we identify and build patterns at school, you can provide additional opportunities to work with patterns at home by doing the following activities:

M	O	L	L	Y	M	O	L	L	Y
M	O	L	L	Y	M	O	L	L	Y
M	O	L	L	Y	M	O	L	L	Y
M	O	L	L	Y	M	O	L	L	Y
M	O	L	L	Y	M	O	L	L	Y

Patterns on a name grid

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

Patterns on a 100 Chart



Patterns on number lines

- **Coin Patterns.** Use coins to start a pattern such as: nickel, penny, penny, nickel, penny, penny, nickel. Then invite your child to continue the pattern or build a pattern for you to extend. Look for ways to extend patterns such as asking your child to predict which will be the tenth or fifteenth coin in the pattern.
- **Pretty Patterns.** Invite your child to use beads, buttons, star stickers, or other household objects to build patterns. (Or your child might like to use shapes cut out of colored paper.) Help your child preserve a favorite pattern by stringing the objects on a piece of yarn.
- **Find Patterns.** Ask your child to find and describe patterns around the house or on a walk. Quilts often use repeating patterns. An excellent alphabet book based on American patchwork patterns is *Eight Hands Round* by Ann Whitford Paul. Your child may enjoy this book or other books with quilt illustrations at the library.
- **Tell Time with the Hour Hand.** Ask your child to look at only the hour hand on an analog clock to tell the approximate time. For example, a clock with the hour hand pointing at 2 is about 2 o'clock. When the hour hand is between 2 and 3, ask if it is right after 2 o'clock, halfway between 2 and 3 o'clock, or just before 3 o'clock.

## Math Facts and Mental Math

This unit continues the development of the addition facts with sums to ten and specifically focuses on the facts in:

Group A:  $0 + 1$ ,  $1 + 1$ ,  $2 + 1$ ,  $3 + 1$ ,  $0 + 2$ ,  $2 + 2$ ,  $3 + 2$ ,  $4 + 2$

Group B:  $3 + 0$ ,  $4 + 0$ ,  $4 + 1$ ,  $5 + 1$ ,  $6 + 1$ ,  $5 + 2$ ,  $6 + 2$ ,  $5 + 3$ ,  $7 + 1$ ,  $1 + 8$

You can help your child develop strategies for these facts using the flash cards that are sent home or by making a set from index cards or scrap paper. Study the facts in small groups each night. As your child goes through the flash cards, put the cards in three stacks: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn.

For Facts I Need to Learn, work on strategies for figuring them out. A good strategy for the facts in Group A:

Count On. To solve  $2 + 5$ , think what is 2 more than 5. Or start at 5 and count on 2.

For Facts I Can Figure Out, use the flash cards to practice the facts for fluency. Ask your child to solve the related subtraction facts as well. For example, if  $6 + 1 = 7$ , what is 7 minus 1? Or 7 minus 6?

For Facts I Know Quickly, help your child use mental math strategies to:

Add 10s related to the addition facts.  $16 + 1 = 17$ ,  $30 + 10 = 40$ ,  $11 + 8 = 19$

Solve the related subtraction facts. If  $16 + 1 = 17$ , what is 17 minus 16?

Thank you for taking time to talk with your child about what he or she is doing in math. Please feel free to contact me with any questions, concerns, or comments.

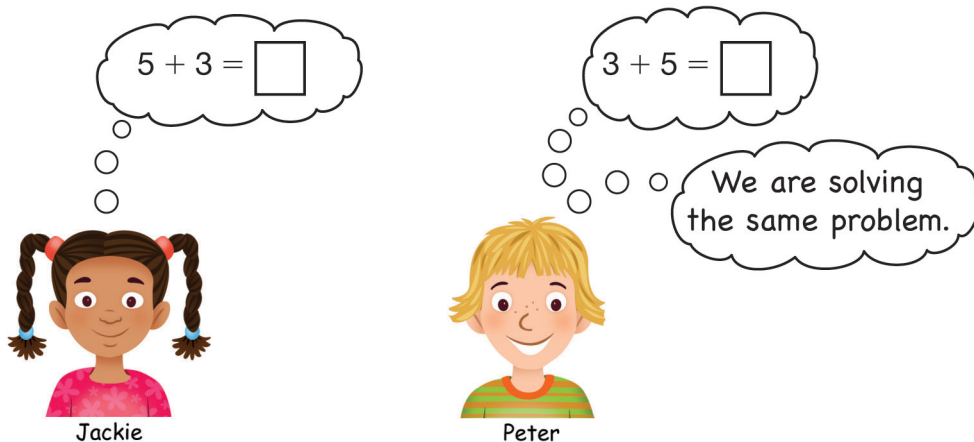
Sincerely,

# Unit 9: Home Practice

## Part 1 Addition Flash Cards: Groups A and B

Take home your Addition Flash Cards: Groups A and B. Ask a family member to choose one flash card at a time for you to solve. Sort the flash cards into three piles: Facts I Know Quickly, Facts I Can Figure Out, and Facts I Need to Learn. Use the cards in the Facts I Know Quickly pile to circle the facts you know quickly on the *Addition Facts I Know* chart. Clip these cards together and place them back into the envelope. Practice the facts in the last two piles again.

## Part 2 Addition Facts



Do you agree with Peter? Explain. \_\_\_\_\_

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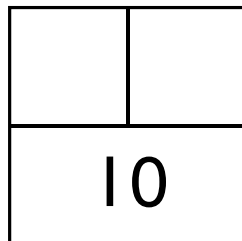
**Part 3 Break Apart the Numbers**

Write the missing number in the number sentence. Complete each part-whole diagram to match the number sentence.

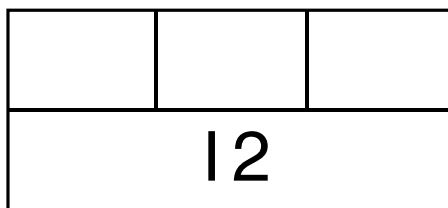
**Number Sentence**

**Part-Whole Diagram**

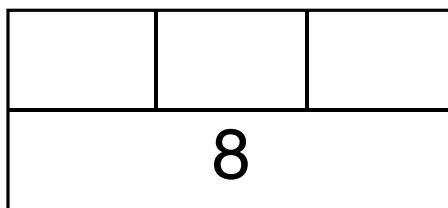
1.  $10 = 7 + \square$



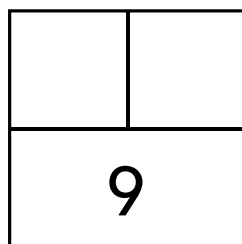
2.  $12 = 5 + \square + 2$



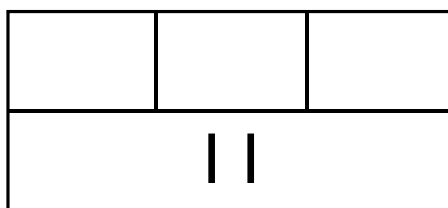
3.  $8 = \square + 2 + 2$



4.  $9 = \square + 4$



5.  $11 = 4 + \square + 1$



**Part 4** Growing Patterns

What is next?

A. 1, 3, 5, 7, 9, \_\_\_\_\_

B. 2, 4, 6, 8, 10, \_\_\_\_\_

C. 5, 10, 15, 20, \_\_\_\_\_

D. 7, 6, 5, 4, 3, \_\_\_\_\_

E. 45, 40, 35, 30, 25, \_\_\_\_\_

F.  $\times$     $\times\times$     $\begin{matrix} \times\times \\ \times \end{matrix}$     $\begin{matrix} \times\times \\ \times\times \end{matrix}$     $\begin{matrix} \times\times\times \\ \times\times \end{matrix}$    \_\_\_\_\_

**Part 5** Growing Patterns Again

What is next? Use the *100 Chart* to help you.

A. 35, 40, 45, 50, \_\_\_\_\_

B. 22, 32, 42, 52, \_\_\_\_\_

C. 90, 80, 70, 60, \_\_\_\_\_

D. 35, 37, 39, 41, 43, \_\_\_\_\_

E. 13, 14, 15, 16, 17, \_\_\_\_\_

# 100 Chart

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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# Addition Flash Cards: Groups A and B

Zero

$$\begin{array}{r} 0 \\ + 1 \\ \hline \end{array}$$

Group A

One more

$$\begin{array}{r} 1 \\ + 1 \\ \hline \end{array}$$

Group A

One more

$$\begin{array}{r} 2 \\ + 1 \\ \hline \end{array}$$

Group A

One more

$$\begin{array}{r} 3 \\ + 1 \\ \hline \end{array}$$

Group A

Zero

$$\begin{array}{r} 0 \\ + 2 \\ \hline \end{array}$$

Group A

Two more

$$\begin{array}{r} 2 \\ + 2 \\ \hline \end{array}$$

Group A

Two  
more

$$\begin{array}{r} 3 \\ + 2 \\ \hline \end{array}$$

Group A

Two  
more

$$\begin{array}{r} 4 \\ + 2 \\ \hline \end{array}$$

Group A

One  
more

$$\begin{array}{r} 4 \\ + 1 \\ \hline \end{array}$$

Group B

One  
more

$$\begin{array}{r} 5 \\ + 1 \\ \hline \end{array}$$

•	•	•	•	•
x				

Group B

Zero

$$\begin{array}{r} 3 \\ + 0 \\ \hline \end{array}$$

Group B

Zero

$$\begin{array}{r} 4 \\ + 0 \\ \hline \end{array}$$

Group B







One more

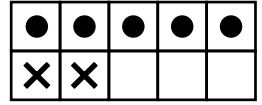
$$\begin{array}{r} 6 \\ + 1 \\ \hline \end{array}$$

Group B

Two more

$$\begin{array}{r} 5 \\ + 2 \\ \hline \end{array}$$

Group B



Two more

$$\begin{array}{r} 6 \\ + 2 \\ \hline \end{array}$$

Group B

One more

$$\begin{array}{r} 7 \\ + 1 \\ \hline \end{array}$$

Group B

One more

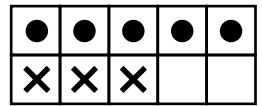
$$\begin{array}{r} 1 \\ + 8 \\ \hline \end{array}$$

Group B

Three more

$$\begin{array}{r} 5 \\ + 3 \\ \hline \end{array}$$

Group B



# Weekend Weather

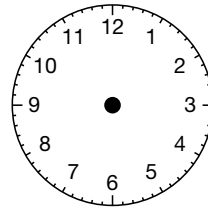


Dear Family Member:

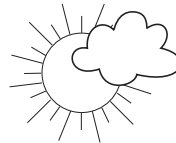
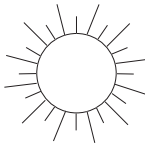
Throughout the month, your child will observe and record sky conditions as part of a study of weather. (You might recall that we collected similar data earlier in the year.) In order to have complete information, we ask you to help your child record the weekend skies. It is important that the observation be made as close to the indicated time as possible.

Thank you.

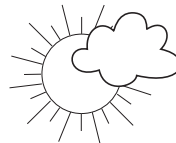
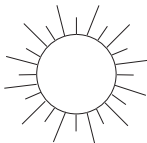
Time of Day:



On Saturday, it was:



On Sunday, it was:



**Be ready to report the weekend weather on Monday.**

# Sorting Flash Cards Board

**Facts  
I Know  
Quickly**

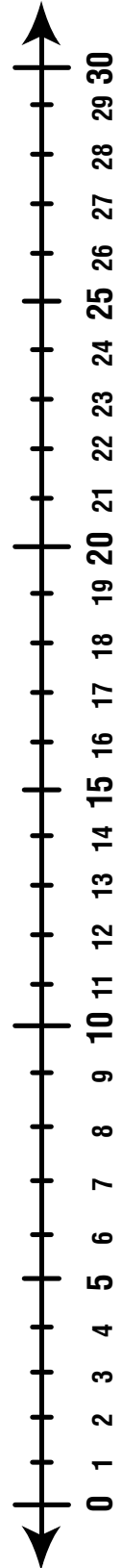
**Facts  
I Can  
Figure Out**

**Facts  
I Need  
To Learn**

# Ten Frames and Number Line







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# 100 Chart

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>25</b>	<b>26</b>	<b>27</b>	<b>28</b>	<b>29</b>	<b>30</b>
<b>31</b>	<b>32</b>	<b>33</b>	<b>34</b>	<b>35</b>	<b>36</b>	<b>37</b>	<b>38</b>	<b>39</b>	<b>40</b>
<b>41</b>	<b>42</b>	<b>43</b>	<b>44</b>	<b>45</b>	<b>46</b>	<b>47</b>	<b>48</b>	<b>49</b>	<b>50</b>
<b>51</b>	<b>52</b>	<b>53</b>	<b>54</b>	<b>55</b>	<b>56</b>	<b>57</b>	<b>58</b>	<b>59</b>	<b>60</b>
<b>61</b>	<b>62</b>	<b>63</b>	<b>64</b>	<b>65</b>	<b>66</b>	<b>67</b>	<b>68</b>	<b>69</b>	<b>70</b>
<b>71</b>	<b>72</b>	<b>73</b>	<b>74</b>	<b>75</b>	<b>76</b>	<b>77</b>	<b>78</b>	<b>79</b>	<b>80</b>
<b>81</b>	<b>82</b>	<b>83</b>	<b>84</b>	<b>85</b>	<b>86</b>	<b>87</b>	<b>88</b>	<b>89</b>	<b>90</b>
<b>91</b>	<b>92</b>	<b>93</b>	<b>94</b>	<b>95</b>	<b>96</b>	<b>97</b>	<b>98</b>	<b>99</b>	<b>100</b>

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Name \_\_\_\_\_ Date \_\_\_\_\_

## Recording and Extending Patterns



Dear Family Member:

Your child is learning about repeating patterns. Here is an example of a repeating pattern with the pattern unit circled:  $\triangle \circ \circ \square \triangle \circ \circ \square$ . The pattern unit is the part that gets repeated—in this case, triangle, circle, circle, square. Help your child circle the pattern unit and extend the patterns below.

Thank you.

**Write or draw the next four objects in the pattern. Draw a ring around the pattern unit.**

1.  $\circ \circ \circ \square \circ \circ \circ \square \circ \circ \circ \square$  \_\_\_\_\_

2.  $\circ \circ \square \square \square \circ \circ \square \square \square \circ \circ$  \_\_\_\_\_

3. **A B A C A B A C A B** \_\_\_\_\_

4. **A B C B A B C B A B C B** \_\_\_\_\_

5. **1, 2, 1, 2, 1, 2,** \_\_\_\_\_

# Super Sleuth



Dear Family Member:

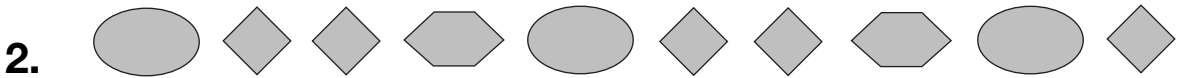
In this assignment, your child should find the part of the pattern that repeats itself and represent the pattern using the letters A, B, C, etc. For example, a boy, girl, boy, girl, boy, girl pattern is translated as ABABAB using alphabet shorthand. Note: all the objects may not be included at the end of the line.

Thank you.

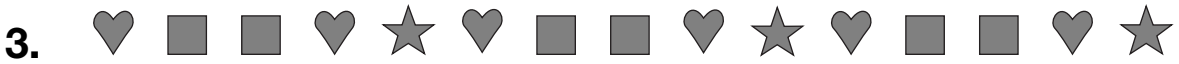
**Record the pattern shown on the lines below.**



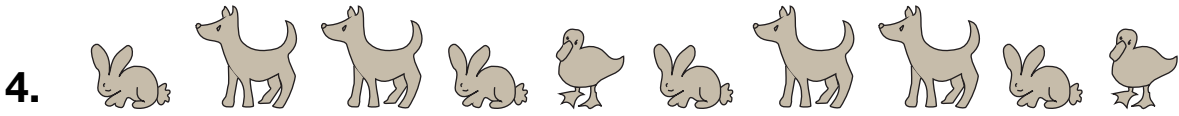
\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_



\_\_\_\_\_

5. Which patterns have the same alphabet shorthand?

\_\_\_\_\_

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# Color a Pattern

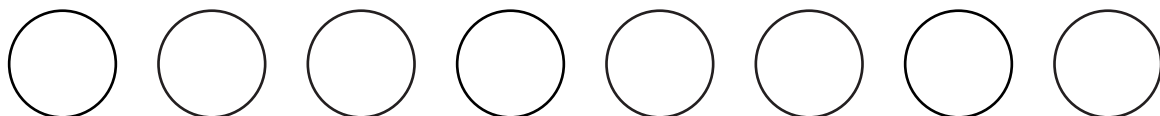
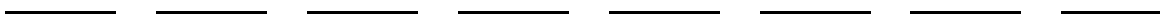
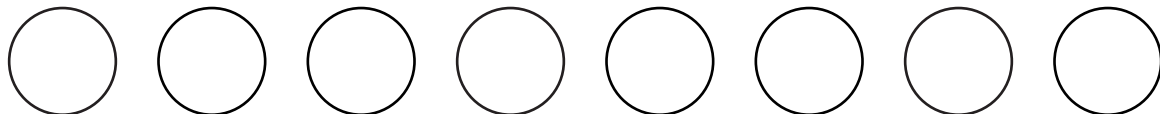


Dear Family Member:

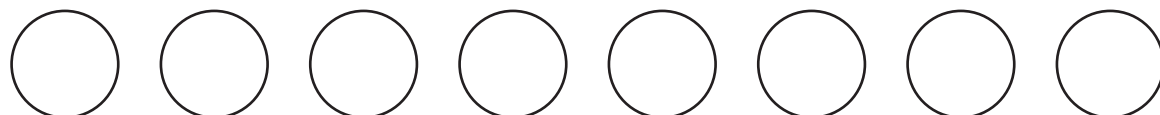
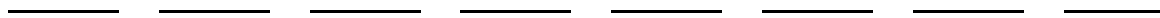
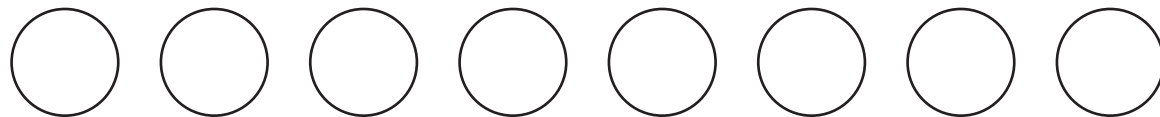
In this assignment, your child is continuing the exploration of patterns. The pattern is given in alphabet shorthand. Help your child show the same pattern by coloring in the circles with different colors.

Thank you.

**1. Color two different A B A B A B patterns.**



**2. Color two different A B B A B B A B B patterns.**





# Where Does It Hop



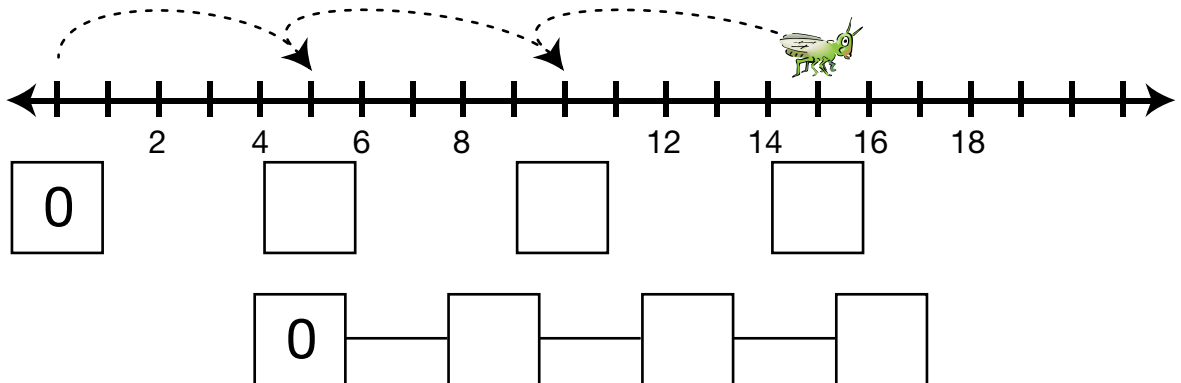
Dear Family Member:

Your child is learning about patterns on the number line. The math hopper (the math grasshopper) is making jumps on a number line. Help your child write the numbers where it lands with each hop. Sometimes it hops forward and sometimes it hops backward.

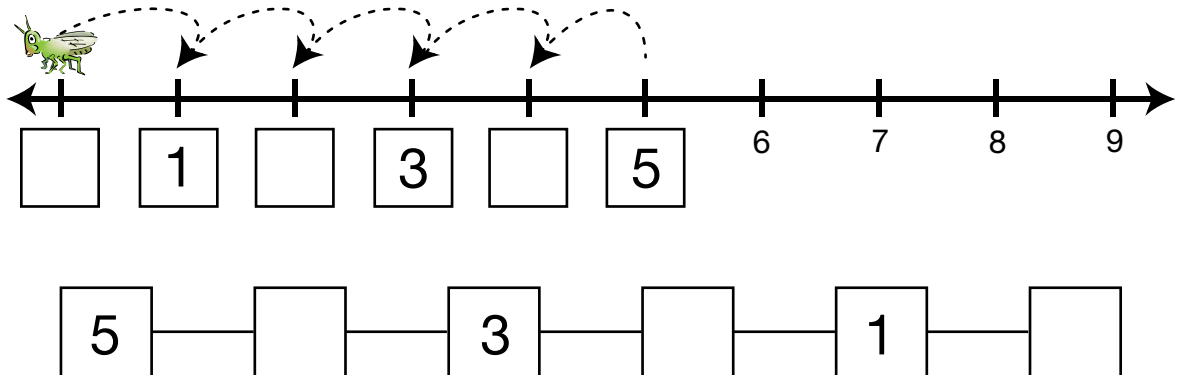
Thank you.

**First write the missing numbers on the number line. Then write the numbers where it hops in the boxes below.**

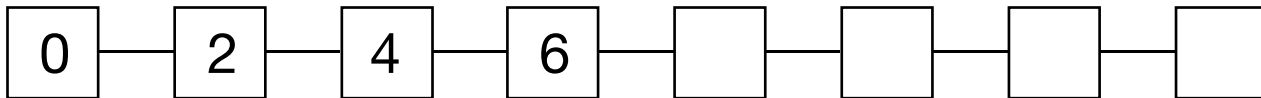
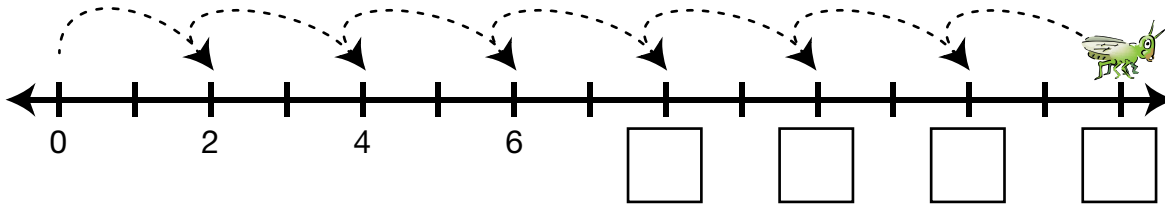
**A. Start at 0. Hop forward.**



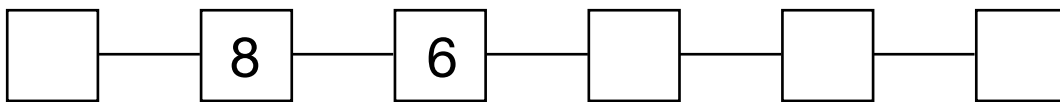
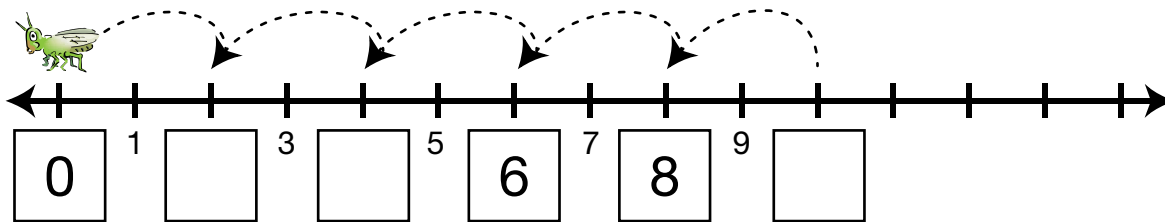
**B. Start at 5. Hop backward.**



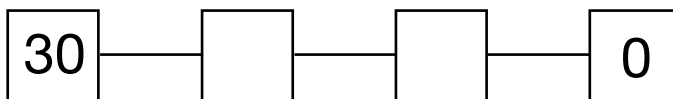
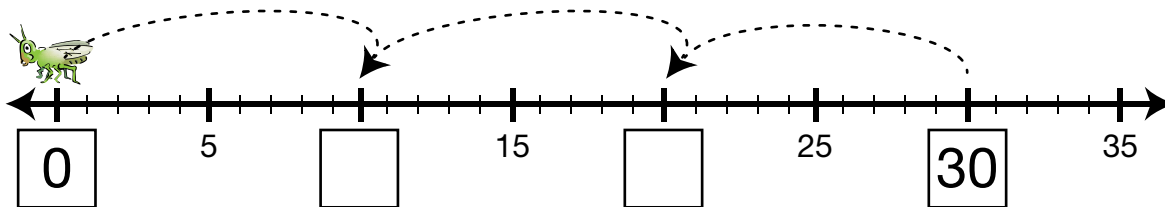
**C.** Start at 0. Hop forward.



**D.** Start at 10. Hop backward.



**E.** Start at 30. Hop backward.



# Ten-by-Ten Name Grid



Dear Family Member:

Your child is learning about patterns in class. Help him or her create a name-grid pattern. In class, your child created a name-grid pattern using his or her own name. In this assignment, help your child fill in the grid by writing the first name of a family member many times. One letter of the name should be written in each box. Have your child color the last letter of the name each time it occurs. Be careful not to skip any boxes. Ask your child about any patterns he or she sees. Thank you.

**Write the first name of a family member in the boxes below. Put one letter in each box. Color every box with the last letter of the name. Tell a family member about the patterns you see.**


# Desk-Size 100 Chart

100 Chart									
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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## Find the Numbers

12	25	37	21
15	40	45	20
28	43	3	49

# Counting by Tens

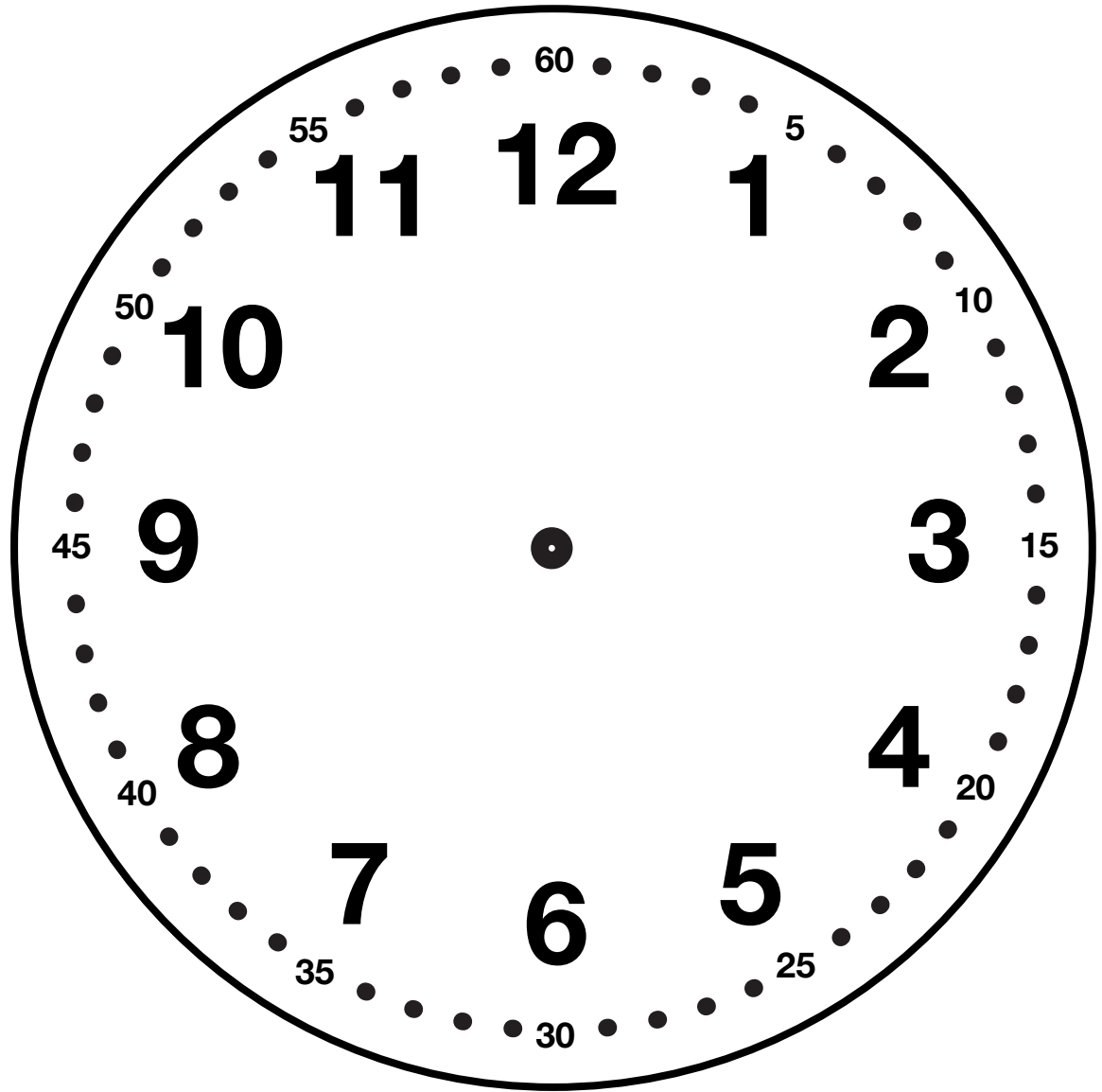


Count by tens, starting with the number on top. Fill in the missing numbers. Then color the *100 Chart* on the back of this page.

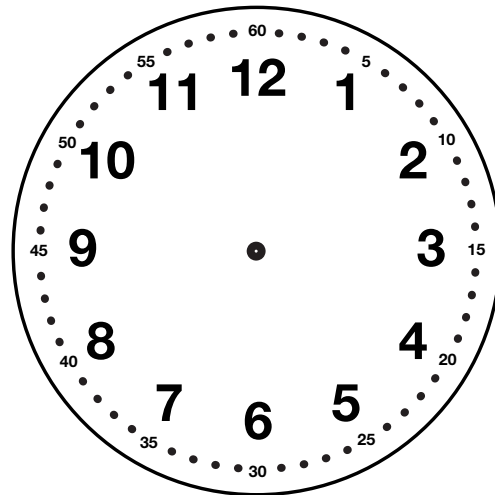
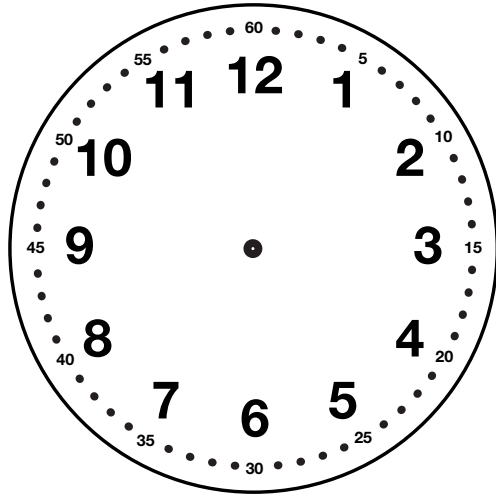
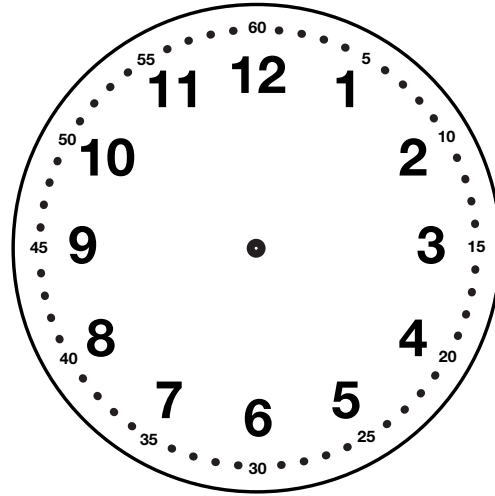
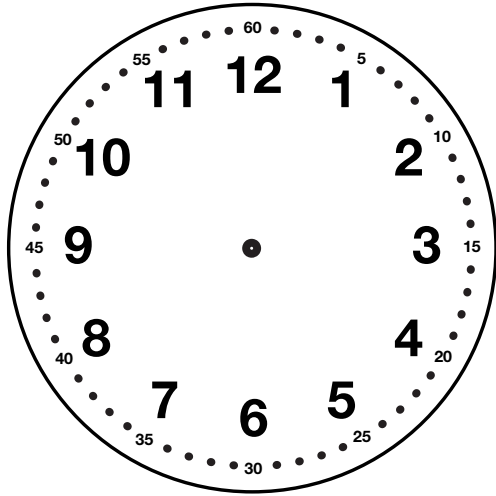
yellow	green	orange	blue	red	purple
8	10	2	5	1	6
18					
28			25		
38					36
				51	

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# Clock



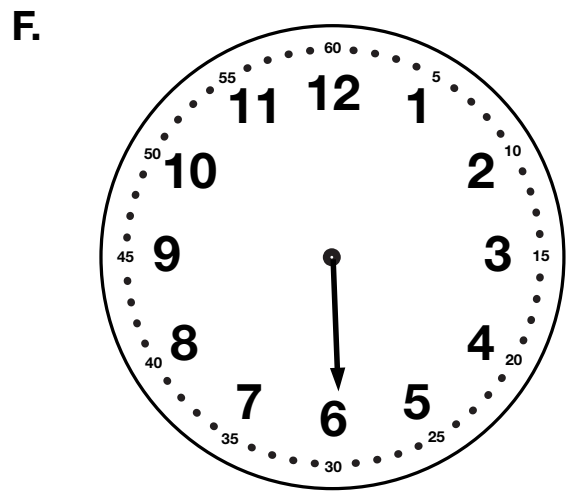
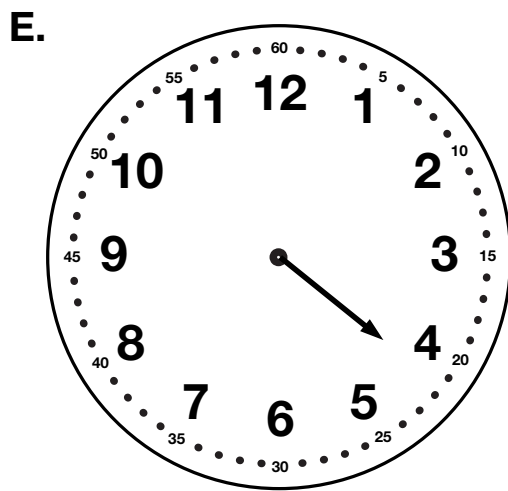
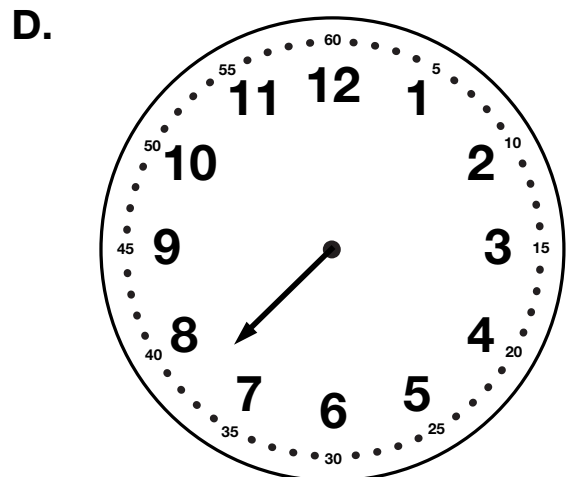
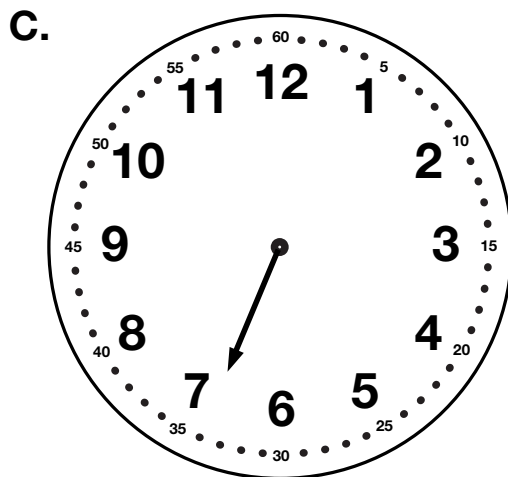
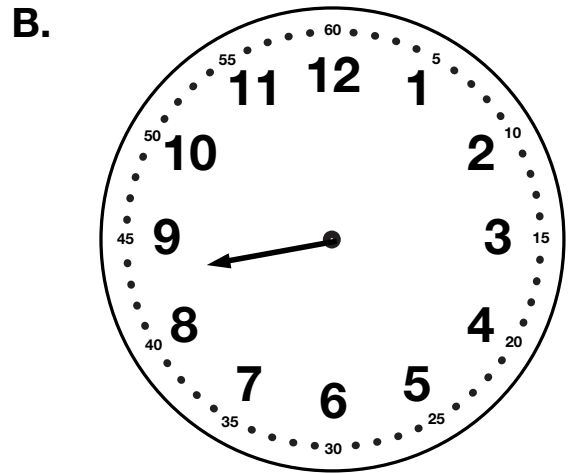
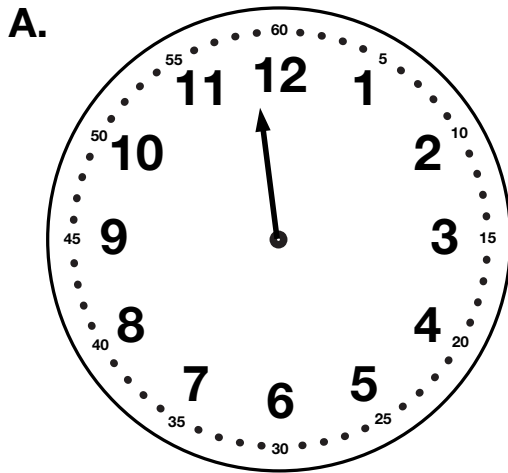
# One-Handed Clocks



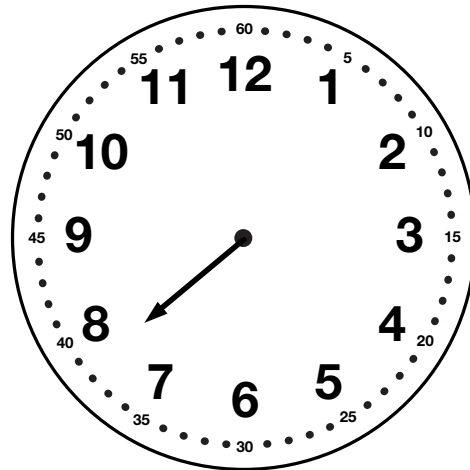
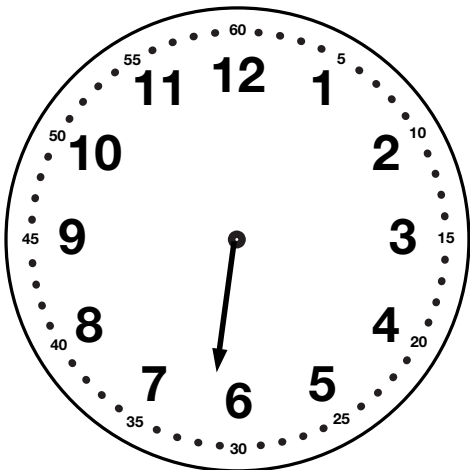
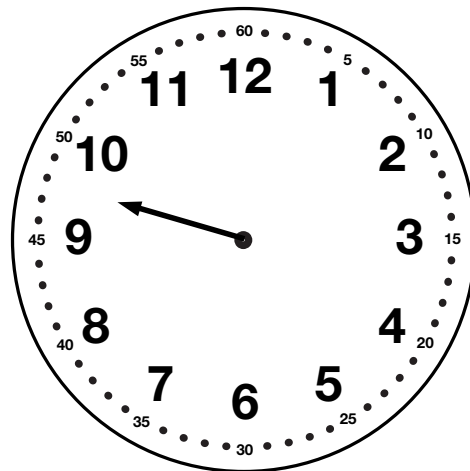
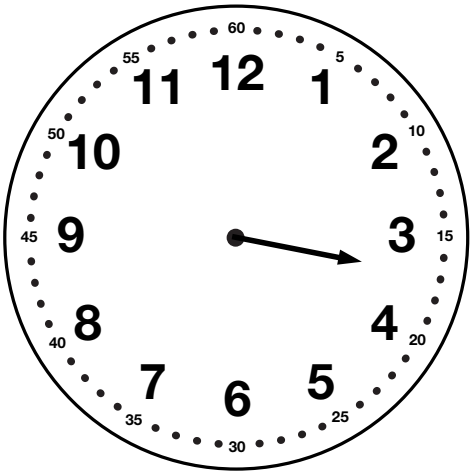
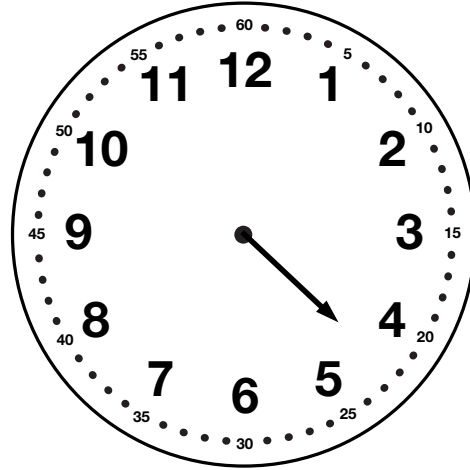
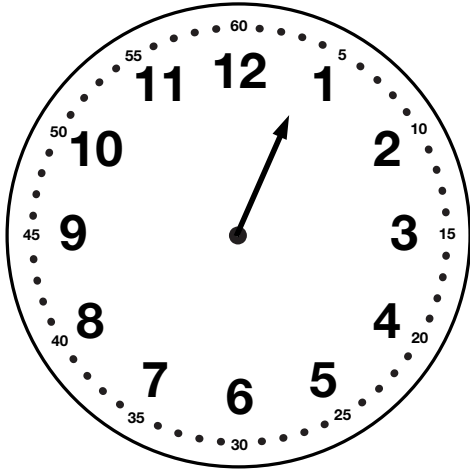
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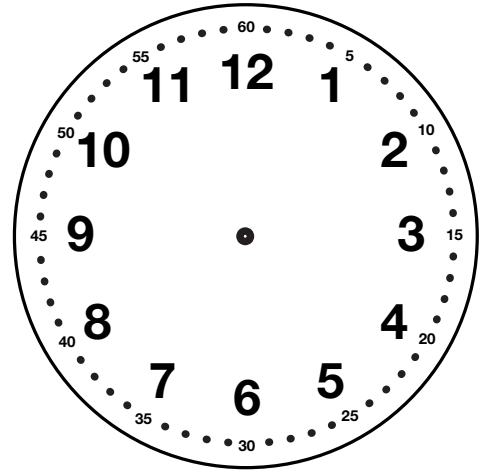
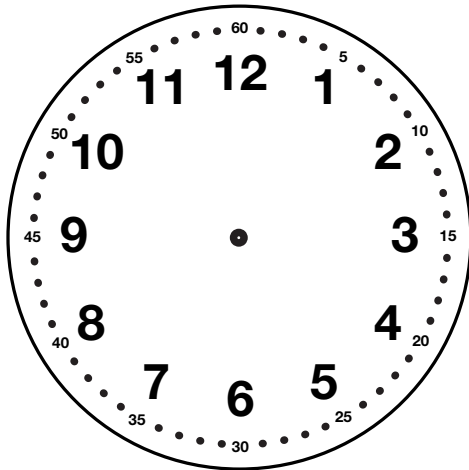
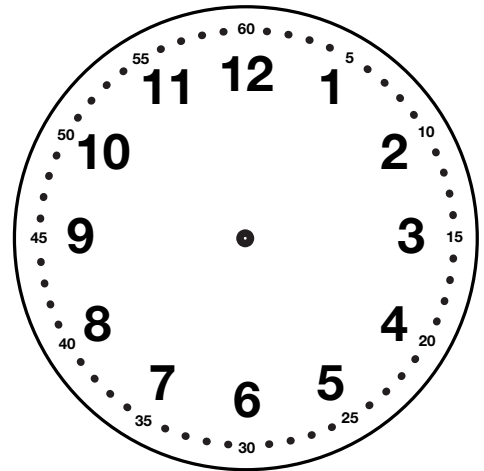
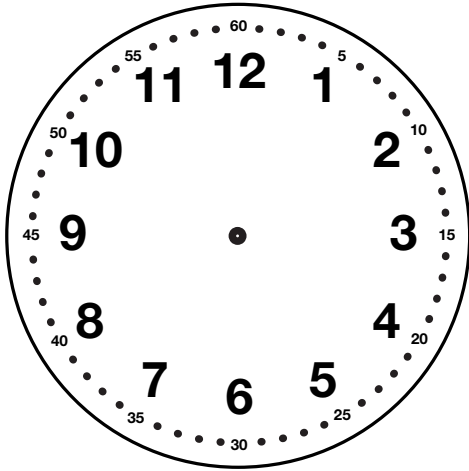
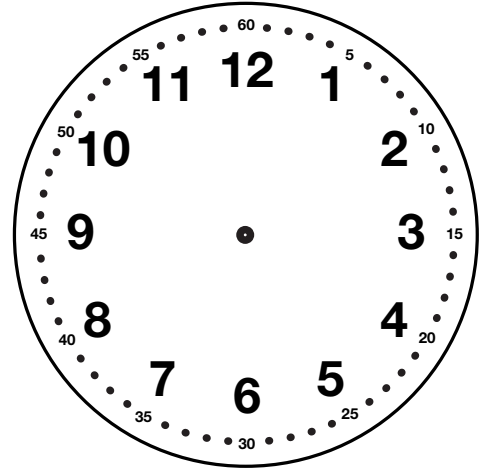
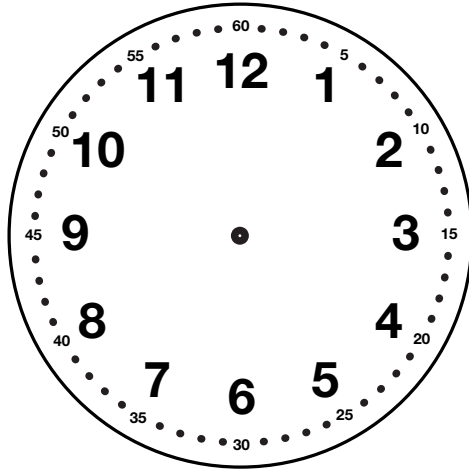
# Practice with One-Handed Clocks



# One-Handed Clock Cards



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# Time Story Cards



John's soccer practice starts **between 4 and 5 o'clock.**

Ming leaves for music class. It is **about 1 o'clock.**

Grace is going to play at the park. It is **a little past 3 o'clock.**

Luis is eating dinner. It is **a little past 6 o'clock.**

Jacob's bus for school comes at **about 8 o'clock.**

Ana is eating a snack. It is **between 9 and 10 o'clock.**