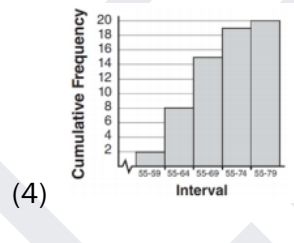
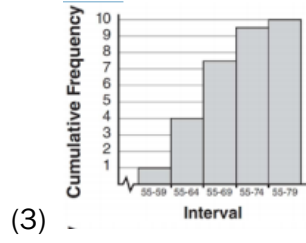
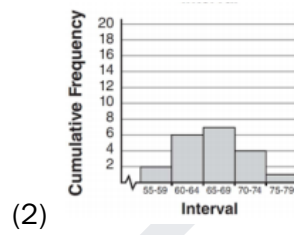
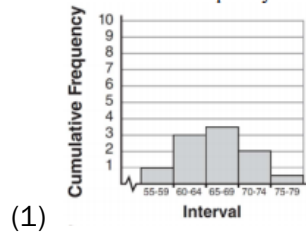


Algebra Success Lesson Plan Template

Lesson Number	Lesson Number 1.01 (Priority: Medium)																				
Learning Target (for Students)	I can construct and interpret a histogram.																				
Focus Standard	<p>S-ID.A.1</p> <p>What it says: Represent data with plots on the real number line (dot plots, histograms, and box plots).</p> <p>We should think: Represent - correctly answer questions by interpreting data in dot plots, histograms, and box plots.</p> <p><u>Prerequisite standards:</u></p> <ul style="list-style-type: none"> 6.SP.B.4 - Display numerical data in plots on a number line, including dot plots, histograms, and box plots. 																				
Lesson Overview	<p>In this conceptual lesson, students will understand that the best way to display the travel-time data is with a histogram and not a line plot or a dot plot. The lesson opens up with a Do Now asking to ID what is the best way to display the data. Histograms are best to display data frequencies. You should then model how to create a histogram using the data provided, and then ask students CFU questions that pushes their interpretation of the data. The rest of independent practice should revolve around creating and interpreting histograms.</p> <p>REMOTE LEARNING MODIFICATIONS: Open with a Do Now that allows for students to explore the data set openly, without affirming correct/incorrect responses. Then model for students how to create a frequency table, and ultimately a histogram, using the data provided. The remaining of the independent practice should allow for students to practice creating frequency tables and histograms</p>																				
Academic Vocabulary	Histogram Frequency Intervals Clusters																				
Materials Needed (Link)	<p>Traveling to School Teacher Edition</p> <p>Traveling to School Student Edition</p>																				
Aligned Common Assessment Question	<p>Mr. Valenza recorded the height, in inches, of each student in his class. The results are recorded in the table below.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td>60</td><td>59</td><td>70</td><td>65</td><td>64</td></tr> <tr> <td>61</td><td>58</td><td>72</td><td>75</td><td>66</td></tr> <tr> <td>65</td><td>67</td><td>63</td><td>62</td><td>68</td></tr> <tr> <td>68</td><td>69</td><td>74</td><td>61</td><td>70</td></tr> </tbody> </table>	60	59	70	65	64	61	58	72	75	66	65	67	63	62	68	68	69	74	61	70
60	59	70	65	64																	
61	58	72	75	66																	
65	67	63	62	68																	
68	69	74	61	70																	

Which cumulative frequency histogram represents the data?



Key Understandings

- Histograms are used to display frequency of occurrences in a data set that has been divided into classes

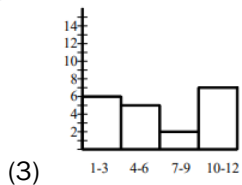
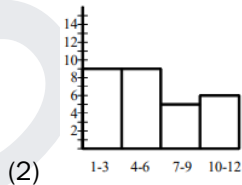
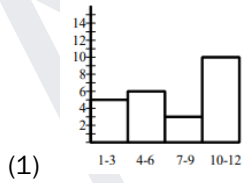
Key Skills

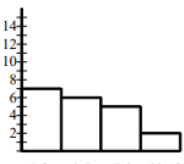
- Represent and interpret data with plots on the real number line using histograms

Exit Ticket

1. Which histogram uses the table below?

<u>Class Interval</u>	<u>Frequency</u>
<u>1-3</u>	<u>7</u>
<u>4-6</u>	<u>6</u>
<u>7-9</u>	<u>5</u>
<u>10-12</u>	<u>2</u>



	 <p>(4)</p>
Potential Scaffolds	<ul style="list-style-type: none"> ● Provide students with labeled axis ● Pre-draw intervals on both axis ● Prioritize the most essential problems of independent practice that is aligned to exit ticket ● Pre-create frequency tables for students ● Define new vocabulary for students in comments box

Anticipated Misconceptions	
What are the anticipated challenges/misconceptions?	What is your plan to address the challenges/misconceptions?

Instructional Activities				
Lesson Component	SEL Indicator	Instruction	Differentiation	Assessment
	Identify 1 focus SEL indicator , draft an SEL learning target and align it to a lesson component below.		Identify specific instructional strategies and/or approaches to strategic grouping that will remove barriers for subpopulation of students accessing rich mathematics	What evidence will students produce to demonstrate their thinking and/or learning?
Engage: Do Now/Warm-up (Time)	SEL Indicator (Write number):		N/A	
Activity #1: Noticing and Questioning - Whole Class (Time)	SEL Learning Target (Write as a student-facing objective):		N/A	

Activity #2: Noticing and Questioning - Partner Work (Time)	Aligned Lesson Component (<i>When does the direct instruction of the SEL indicator take place? How will students know?</i>):			
Activity #3: Lesson Closure and Exit Ticket (Time)				

SAMPLE

Name: _____

Period: _____

Date: _____

Do Now

Instructions: Answer the following questions by showing all of your work. When necessary, be sure to use complete sentences.

Let's Take It Back...

1.	2.
----	----

Setting up for Success

3. A middle school class studied the times the students woke up in the morning. The class wondered how much time it took each student to travel to school in the morning. The table below shows the data they collected

Students' Travel Times to School

Student	Travel Time (minutes)	Distance (miles)	Mode of Travel	Student	Travel Time (minutes)	Distance (miles)	Mode of Travel
LS	5	0.50	bus	DW	17	2.50	bus
CD	5	0.25	walking	MN	17	4.50	bus
ME	5	0.50	bus	AP	19	2.25	bus
EL	6	1.00	car	MP	20	1.50	bus
KR	8	0.25	walking	AT	20	2.75	bus
NS	8	1.25	car	JW	20	0.50	walking
NW	10	0.50	walking	JB	20	2.50	bus
RC	10	1.25	bus	MB	20	2.00	bus
JO	10	3.00	car	CF	20	1.75	bus
ER	10	1.00	bus	RP	21	1.50	bus
TH	11	1.50	bus	LM	22	2.00	bus
DD	15	2.00	bus	QN	25	1.50	bus
SE	15	0.75	car	AP	25	1.25	bus
AE	15	1.00	bus	CC	30	2.00	bus
CL	15	1.00	bus	BA	30	3.00	bus
HCP	15	1.50	bus	BB	30	4.75	bus
JW	15	1.50	bus	FH	35	2.50	bus
SW	15	2.00	car	KLD	35	0.75	bus
CW	15	2.25	bus	AB	50	4.00	bus
KG	15	1.75	bus	DB	60	4.50	bus

- a. Based on the data, what three questions do you think the class asked?
- b. What are the ways the class could illustrate the data? Explain your response

Name: _____

Period: _____

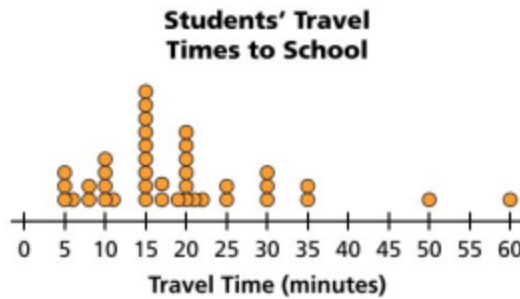
Date: _____

Example Problems

Example #1:

You can draw a histogram to display the data in the table. A **histogram** is a graph that organizes numerical data into *intervals*.

Step 1: Draw a dot plot or make a frequency table to display the data.

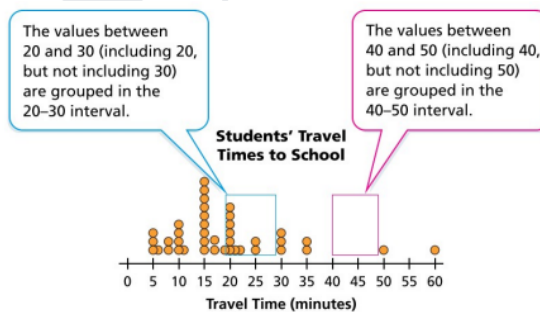


The data on student travel times vary from 5 minutes to 60 minutes.

- Why is the number line on the top spot labeled every 5 minutes instead of every minute?

- How can you identify the data values on the top spot when the number line is labeled every 5 minutes?

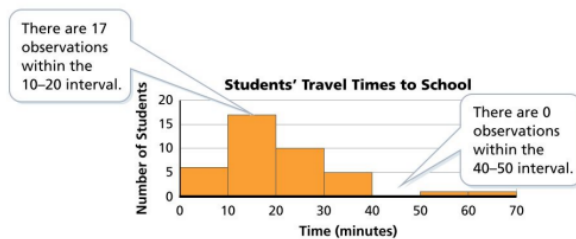
Step 2: Determine the frequency of the data values that fall into each interval, or group of consecutive numbers.



The height of each bar of the histogram represents the number of data values within a specified **interval**, or group consecutive numbers.

Step 3: Drop the histogram. The histogram below has an interval size of 10 minutes.

Note: in the histogram below, data values of 10 minutes are graphed in the intervals 10 to 20 minutes, data values of 20 minutes are graphed in the interval 20 to 30 minutes, and so on.



- **How is a histogram like a bar graph? How is it different?**

- **How can you use a dot plot or frequency table to help you make a histogram?**

- **What does interval size mean?**

- **Using the same data, what would a histogram with a different interval size look like?**

- In the histogram above, the data are grouped into 10 - minute intervals. The data could also be grouped into larger or smaller intervals. Sometimes changing the interval size of the histogram helps you see different patterns in the data.
 - Make a histogram that displays the travel - time data. Use an interval size of 5 minutes. Please use a separate sheet of paper for this.
 - Compare the histogram above with the histogram you drew in part 1. How does each histogram help you describe the student travel times?
- Which students most likely wake up the latest in the morning? Explain.

- Which students most likely wake up the earliest? Explain.

Independent Practice

Instructions: Answer the following questions by showing all of your work. When necessary, be sure to use complete sentences.

Mild:

1. Using the data below, complete the frequency table.

DATA: 30, 32, 11, 14, 40, 37, 16, 26, 12, 33, 13, 19, 38, 12, 28, 15, 39, 11, 37, 17, 27, 14, 36

Number	Tally	Frequency
11 - 15		
16 - 20		
21 - 25		
26 - 30		
31 - 35		
36 - 40		

2. The test scores for 10 students in Ms. Ramirez' First period were 61, 67, 81, 83, 87, 88, 89, 90, 98, and 100. Which frequency table is accurate for this set of data?

(1)

Interval	Frequency
61-70	2
71-80	2
81-90	8
91-100	10

(2)

Interval	Frequency
61-70	2
71-80	0
81-90	6
91-100	2

(3)

Interval	Frequency
61-70	2
71-80	2
81-90	7
91-100	10

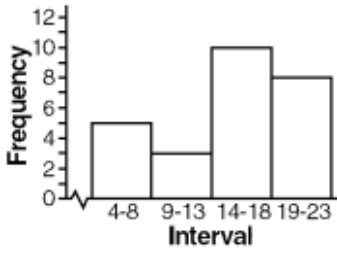
(4)

Interval	Frequency
61-70	2
71-80	0
81-90	8
91-100	10

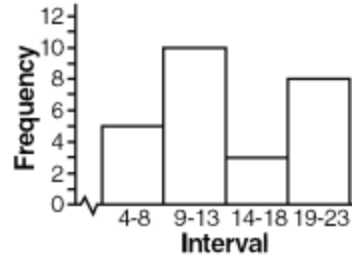
Medium:

1. Which one of the following histograms represents the data in the table below?

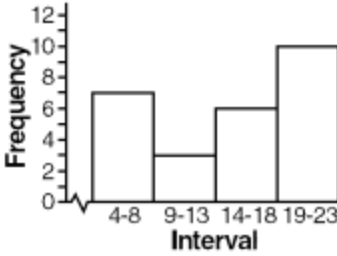
Interval	Frequency
4-8	8
9-13	3
14-18	10
19-23	5



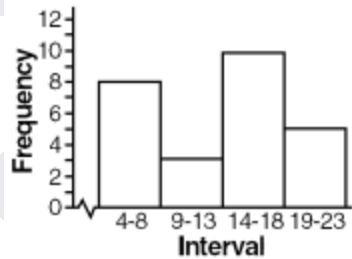
(1)



(2)



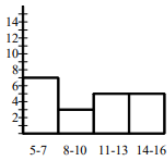
(3)



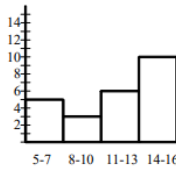
(4)

2. Which histogram uses the table below?

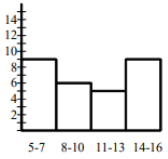
Class Interval	Frequency
5-7	7
8-10	3
11-13	5
14-16	5



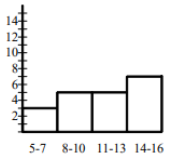
(1)



(2)



(3)



(4)

Spicy:

1. Ms. Geng recorded her students' final exam scores in the frequency table below. On the grid below, construct a frequency histogram based on the table.

Interval	Tally	Frequency
61-70		5
71-80		4
81-90		9
91-100		6

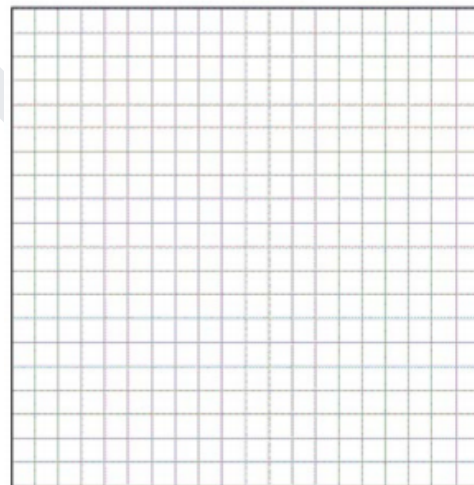


2. The students at School for Collaborative Healthcare took the temperature readings on 30 April mornings. They are shown below.

Using the data, complete the frequency table below.

Interval	Tally	Frequency
40-44		
45-49		
50-54		
55-59		
60-64		
65-69		

On the grid below, construct and label a frequency histogram based on the table.



3. Solve for d

$$h^r \times h^i = h^d$$

SAMPLE

Name: _____

Period: _____

Date: _____

Exit Ticket

Instructions: Answer the following questions by showing all of your work. When necessary, be sure to use complete sentences.

1. Which histogram uses the table below?

<u>Class Interval</u>	<u>Frequency</u>
1-3	7
4-6	6
7-9	5
10-12	2

