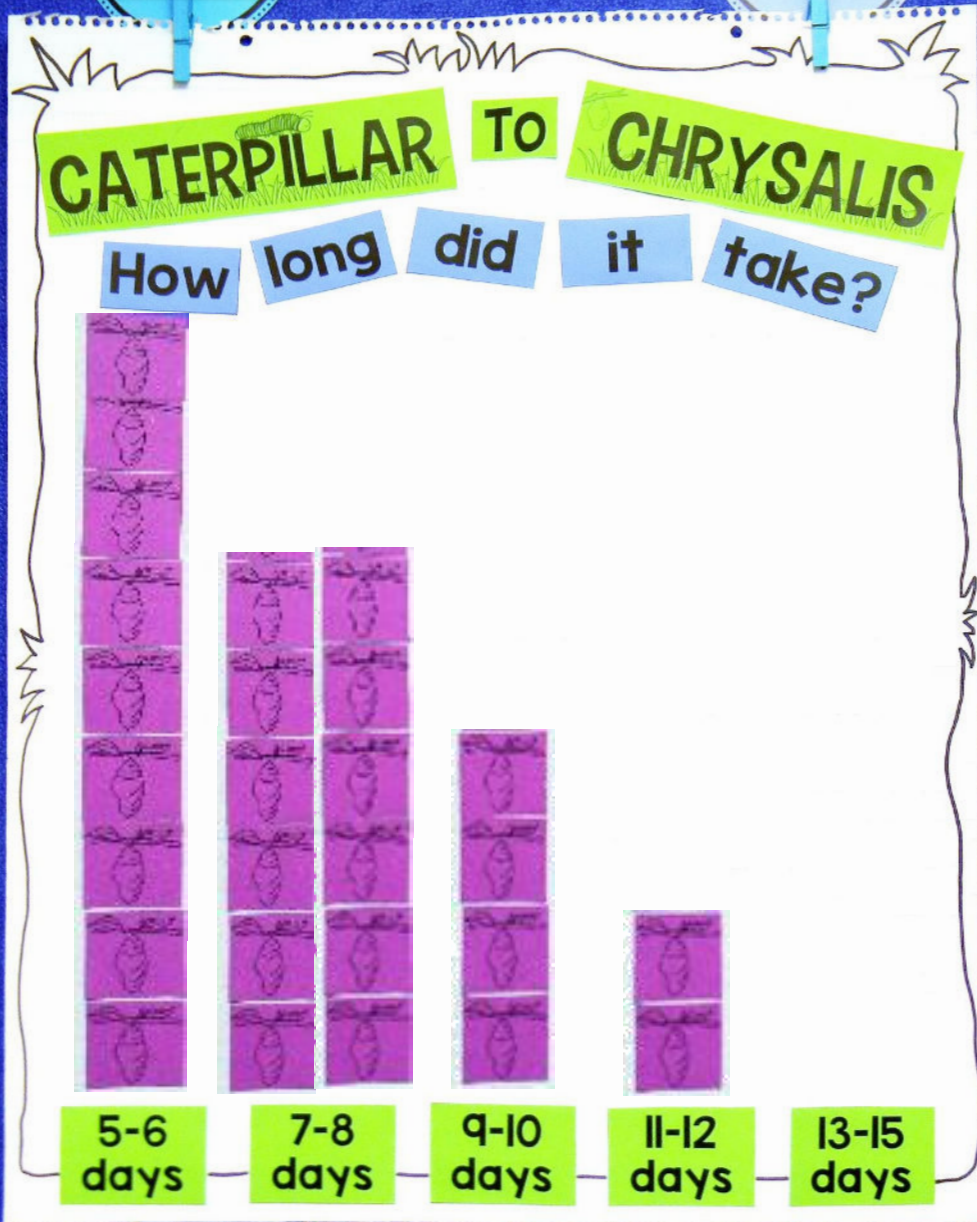


# GRAPH the LIFE CYCLE

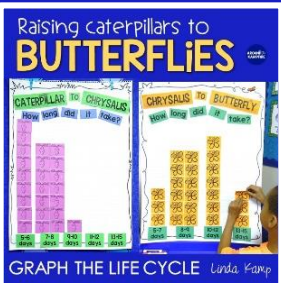


## EASY PREP GRAPHS

Print the chart parts to make your own class graphs

Or choose from projectable graphs instead





# PROJECTABLE GRAPHS

## 12 PROJECTABLE GRAPHS

Projectable bar graphs, pictograph & line plot for each stage of the butterfly life cycle

**From Caterpillar to Chrysalis**

**From Caterpillar to Chrysalis**

5-6 days

7-8 days

9-10 days

11-12 days

13-15 days

**From Caterpillar to Chrysalis**

5-6 days

7-8 days

**From Caterpillar to Chrysalis**

How many times did your caterpillar molt?

How many times did your caterpillar molt?

1 time

2-3 times

4-5 times

6-7 times

8 or more

Tally Chart or Pictograph

How many times did your caterpillar molt?

1 time

2-3 times

4-5 times

6-7 times

8 or more

Line Plot

20 22 24

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**From Chrysalis to Butterfly**

**From Chrysalis to Butterfly**

5-7 days

8-9 day

10-12 day

13-15 day

**From Chrysalis to Butterfly**

**From Chrysalis to Butterfly**

5-7 days

8-9 days

10-12 days

13-15 days

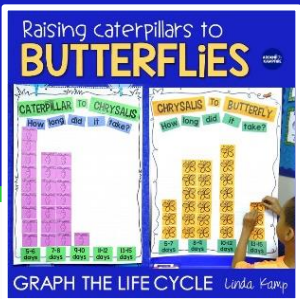
0 2 4 6 8 10 12 14 16 18 20 22 24

Bar Graph

Line Plot

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# GATHERING the DATA



## 1 HERE'S HOW IT WORKS:

Once your caterpillars arrive, students collect data by recording significant changes they observe on a calendar.

As the life cycle progresses, students tally their data and get ready to graph.

Name \_\_\_\_\_ **OBSERVING the CHANGES**

- Fill in the calendar with the dates of the month you are observing your caterpillar.
- On the date it happened, write important changes you observe. To save space write phrases like these:  
arrived molted formed J  
formed chrysalis moved from cup emerged
- Use this calendar to help you generate data for your graph.

month \_\_\_\_\_

Sunday	Monday	Tuesday	Wednesday	Thursday

**GETTING READY TO GRAPH**

Use data from your calendar to answer the questions.

- Count and tally the number of times your caterpillar molted.  
**Number of Times My Caterpillar Molted**  
It molted \_\_\_\_\_ times.
- Count and tally the number of days it took to form a chrysalis.  
**Caterpillar to Chrysalis How Many Days?**  
It took \_\_\_\_\_ days.
- Count and tally the number of days it took to emerge as a butterfly.  
**Chrysalis to Butterfly How Many Days?**  
It took \_\_\_\_\_ days.

month \_\_\_\_\_

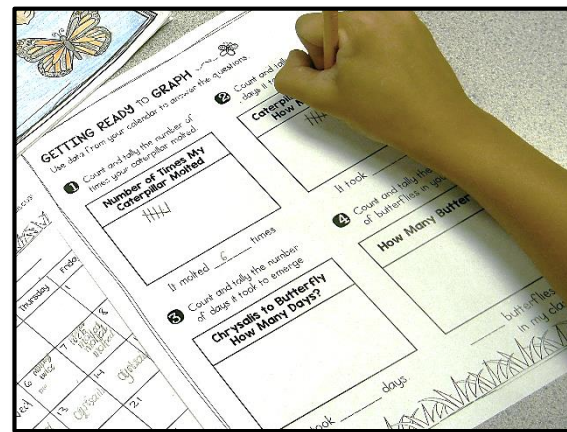
Tuesday	Wednesday	Thursday	Friday	Saturday
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25
26	27	28	29	30

arrived 15  
molted 16  
formed chrysalis 20  
moved from cup 21  
emerged 29

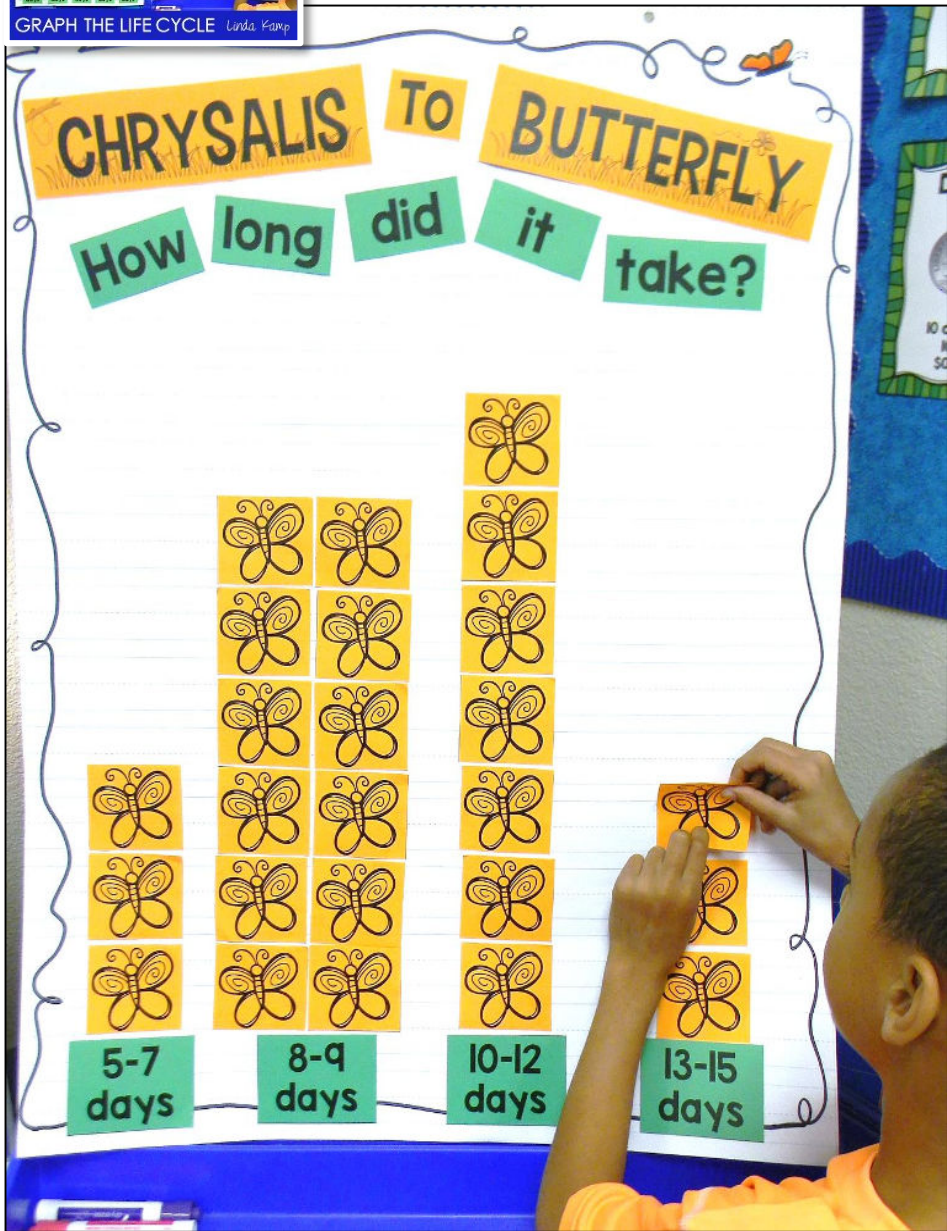
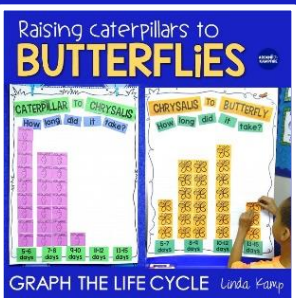
**THINK ABOUT IT!**

How many days did it take for your caterpillar to start spinning sticky threads?

card **4**

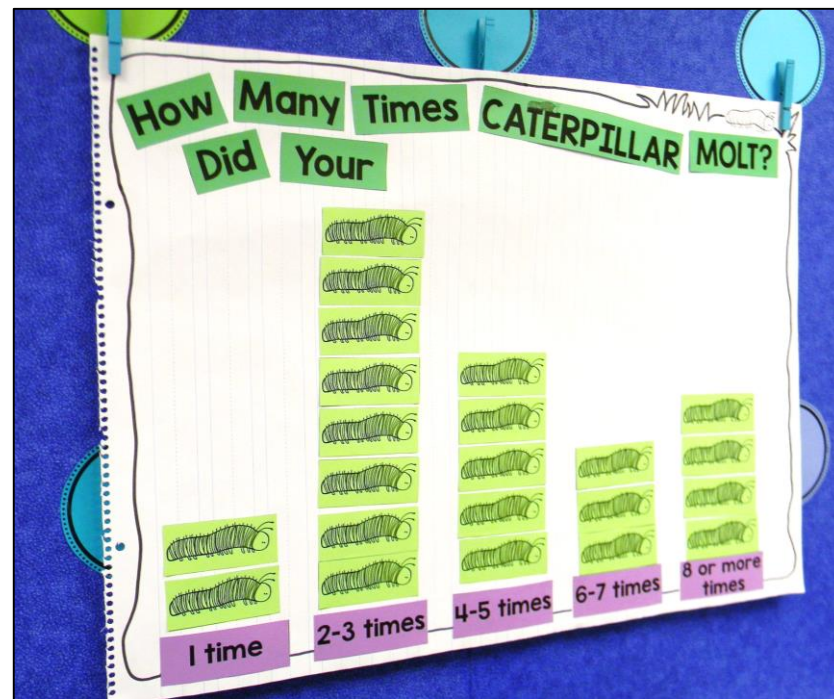


# ORGANIZING the DATA

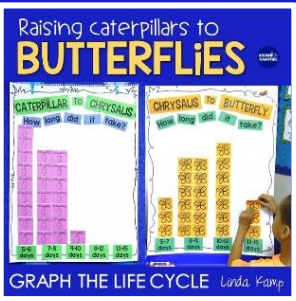


2 Students transfer their data to the class graphs.

Create class graphs on chart paper or use the projectable versions



# INTERPRETING the DATA



NAME \_\_\_\_\_

## CATERPILLAR TO CHRYSALIS

Draw your class graph. Answer the questions about your graph.

CATERPILLAR	TO	CHRYSALIS		
5-6 days	7-8 days	9-10 days	11-12 days	13-15 days

How many caterpillars in all formed a chrysalis? 24

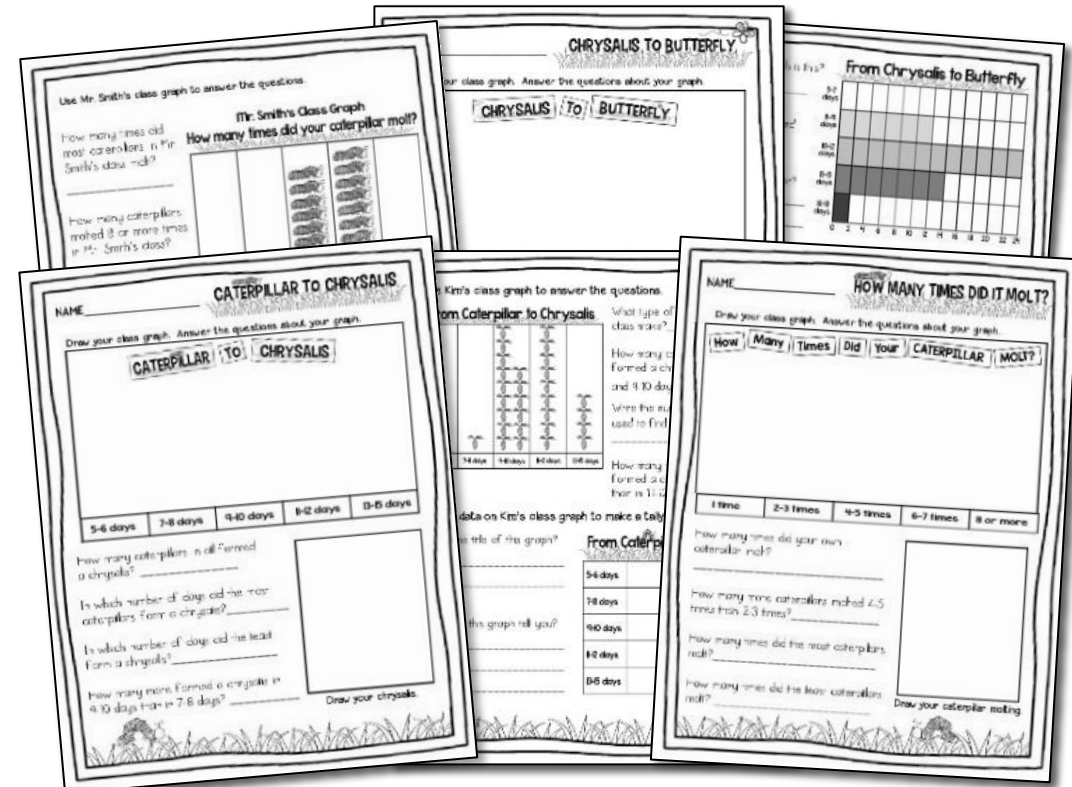
In which number of days did the most caterpillars form a chrysalis? 7-8 days

In which number of days did the least form a chrysalis? 9-10 day

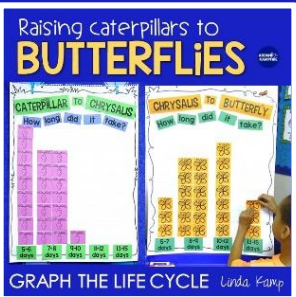
How many more formed a chrysalis in 9-10 days than in 7-8 days? 13

Draw your chrysalis.

**3** Response activity pages give students opportunities to draw the graphs and answer questions about the data.



# DISCUSSING the DATA



Name \_\_\_\_\_

**THINK ABOUT IT!**  
Data Discussion Cards

1

2

Name \_\_\_\_\_

**THINK ABOUT IT!**

1 Fill in the calendar with the dates of the month you are observing your caterpillar.

2 On the date it happened, write important changes you observed. Save space write phrases like these:

arrived molted formed J  
formed chrysalis moved from cup emerged

Use this calendar to help you answer the questions on the discussion cards and on your paper.

Friday Saturday

**THINK ABOUT IT!**

**THINK ABOUT IT!**

How many days did it take for your caterpillar to hang in a J shape?

card 3

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**4** Graph chat discussion cards encourage partners to compare their data and discuss the results.

**Critical Thinking DATA DISCUSSION CARDS**

Objective: Students will interpret data collected in their observation journals by discussing, comparing, and calculating lengths of time for stages of the life cycle.

Materials:  
-discussion cards  
-completed butterfly observation journals  
-student recording page  
-calendar page

**THINK ABOUT IT!**  
How many days did it take for your caterpillar to hang in a J shape?  
card 1

**THINK ABOUT IT!**  
How many days did it take for your caterpillar to molt for the first time?  
card 2

**THINK ABOUT IT!**  
How many days did it take for your caterpillar to change into a butterfly?  
card 5

**THINK ABOUT IT!**  
How many times did your caterpillar molt in all?  
card 6

**THINK ABOUT IT!**  
How many days did it take for your caterpillar to start spinning sticky threads?  
card 3

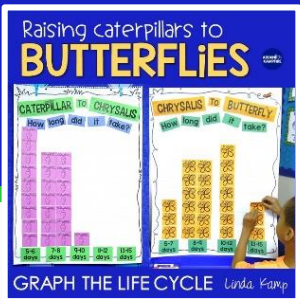
**THINK ABOUT IT!**  
How long did it take for your caterpillar to change into a chrysalis?  
card 4

**THINK ABOUT IT!**  
How many stages of the butterfly were you able to see?  
card 7

**THINK ABOUT IT!**  
How many days did it take for your chrysalis to change into a butterfly?  
card 8

Color & blackline included

# PRACTICE and APPLY



## READ-A-GRAPH TASK CARDS

**5** Once the life cycle is complete, students practice further by interpreting **pictographs, bar graphs & line plots** to answer questions.

### IDEAL FOR:

- independent practice
- math centers
- assessment
- Roam the Room/Gallery Walks

Color & blackline included

**Read-A-Graph** Name \_\_\_\_\_  
Write the answers for each card in the matching box.

**1** Use the graph to answer the question.  
**From Caterpillar to Chrysalis**

5-6 days	
7-8 days	
9-10 days	
11-12 days	
13-15 days	

**2** Use the graph to answer the question.  
**From Caterpillar to Chrysalis**

5-6 days	
7-8 days	
9-10 days	
11-12 days	
13-15 days	

**3** Use the graph to answer the question.  
**From Chrysalis to Butterfly**

5-7 days				
8-9 days				
10-12 days				
13-15 days				
16-18 days				

**4** Use the graph to answer the question.  
**From Chrysalis to Butterfly**

5-7 days	X	XX		
8-9 days	X	XX		
10-12 days	X	XX	X	
13-15 days	X	XX	X	
16-18 days	X	XX	X	X

**5** Use the graph to answer the question.  
**From Chrysalis to Butterfly**

5-6 days	
7-8 days	
9-10 days	
11-12 days	
13-15 days	
16-18 days	

**6** Use the graph to answer the question.  
**From Chrysalis to Butterfly**

5-6 days	
7-8 days	
9-10 days	
11-12 days	
13-15 days	
16-18 days	

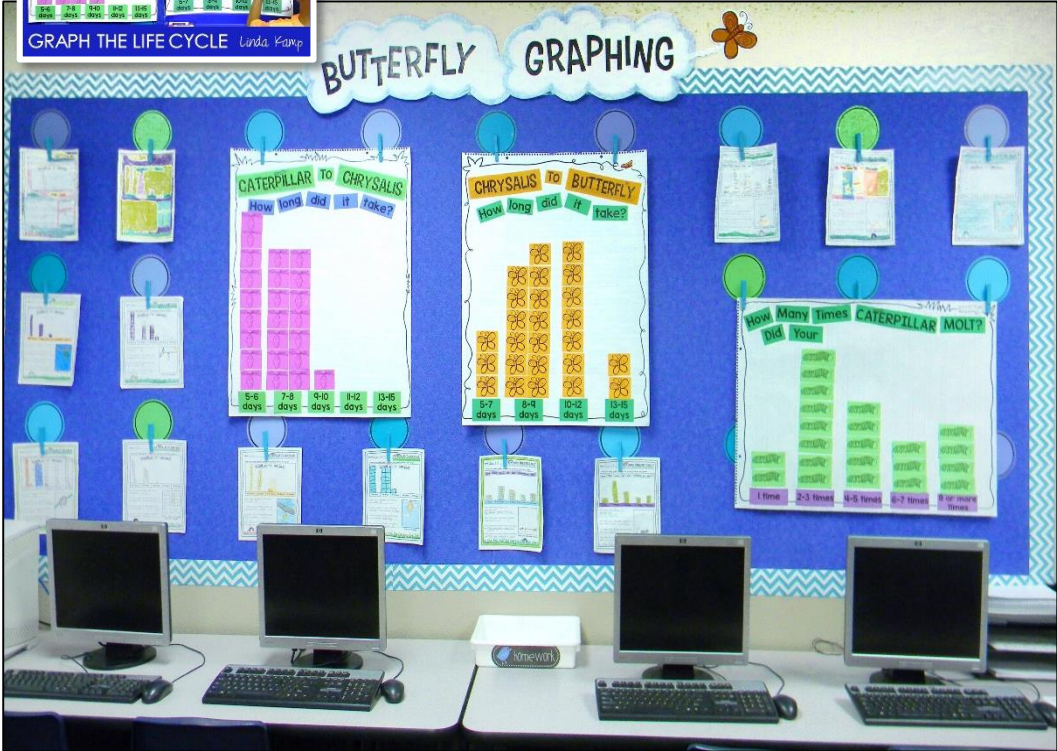
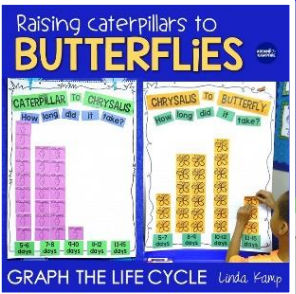
**7** Use the graph to answer the question.  
How many times did your caterpillar molt?

1 time	
2-3 times	
4-5 times	
6-7 times	
8 or more	

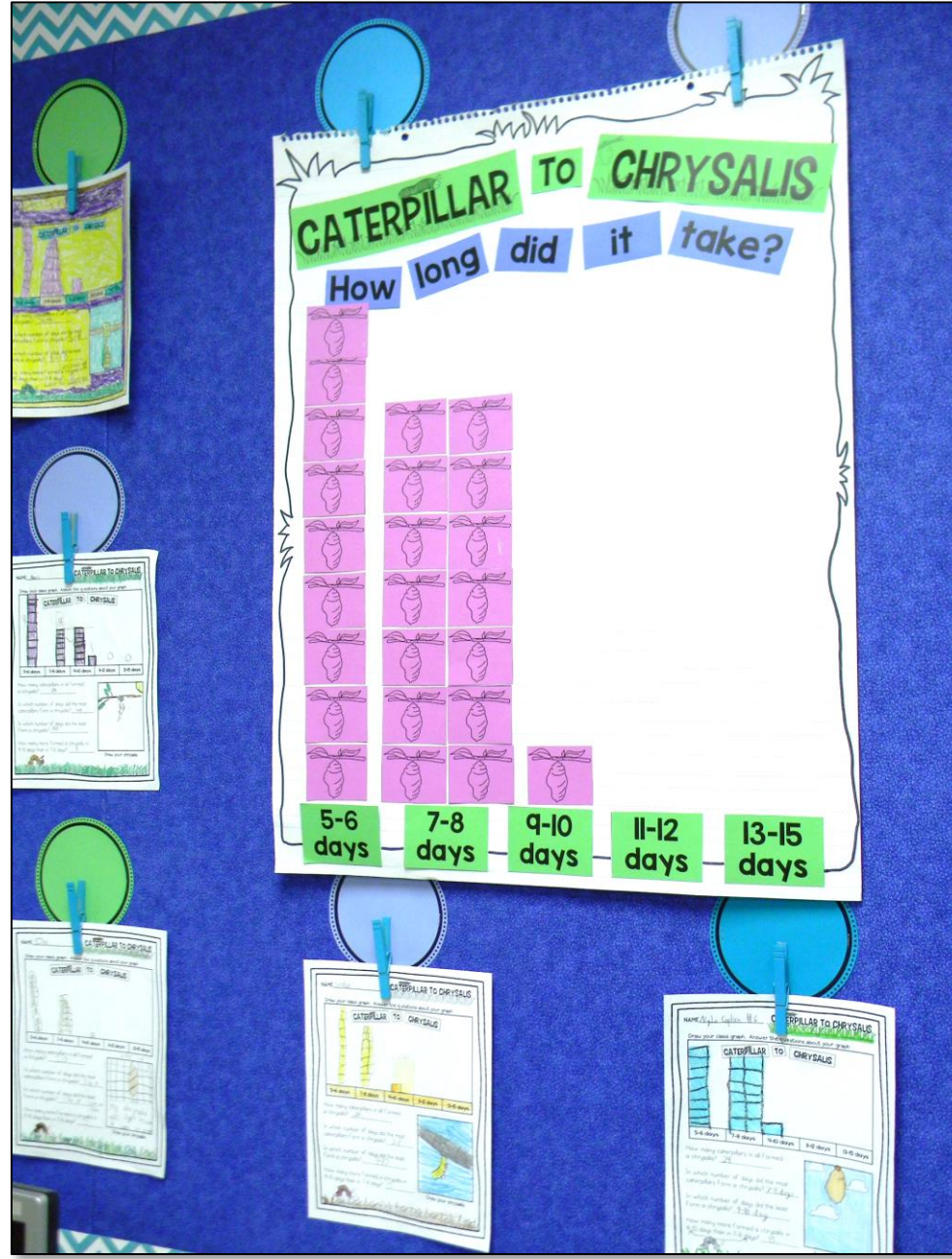
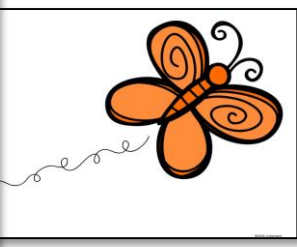
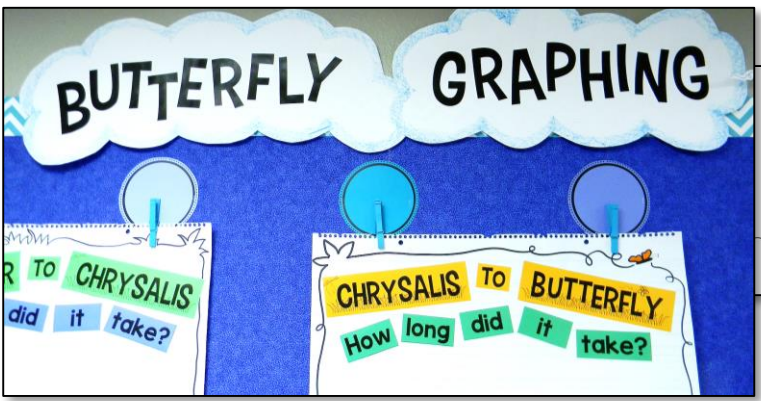
**8** Use the graph to answer the question.  
**From Chrysalis to Butterfly**

5-7 days	
8-9 days	
10-12 days	
13-15 days	
16-18 days	

# DISPLAY the LEARNING

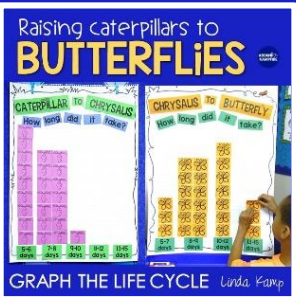


Bulletin board titles included





# TEACHER SUPPORT



### FROM CHRYSALIS to BUTTERFLY graph

Choose How You Use It:

graph you wish to use. Copy the chart parts on a colored copy or construction paper. Prep the graph using this example or use the projectable charts for additional ideas.

### Blank graphs FROM CHRYSALIS to BUTTERFLY

### Blank graphs HOW MANY TIMES DID YOUR CATERPILLAR MOLT?

### HOW MANY TIMES DID YOUR CATERPILLAR MOLT? graph

Choose How You Use It:

Decide on the type of graph you wish to use. Copy the chart parts on a colored copy or construction paper. Prep the graph using this example or use the projectable charts for additional ideas.

Procedure:

1. Pass out the caterpillar cut outs to students.
2. Students use the information on their previously completed Getting Ready to Graph page to determine where to place their caterpillar cut out on the graph.

Display the class graph for students to use as a reference.

### FROM CATERPILLAR to CHRYSALIS graph

Choose How You Use It:

Decide on the type of graph you wish to use. Copy the chart parts on a colored copy or construction paper. Prep the graph using this example or use the projectable charts for additional ideas.

Procedure:

1. Pass out the chrysalis cut outs to students.
2. Students use the information on their previously completed Getting Ready to Graph page to determine where to place their chrysalis cut out on the graph.

Display the class graph for students to use as a reference.

### HERE'S HOW IT WORKS

1. PREP YOUR CHARTS: Prep your charts in advance or use the projectable blank graphs instead. I've included 4 types of blank graphs for each activity. You can also use the blank graphs later for additional graphing practice.
2. COLLECT THE DATA
3. TALLY THE DATA

### HERE'S HOW IT WORKS

4. TRANSFER THE DATA: Use the caterpillar, chrysalis & butterfly Cut Outs to create your class graphs. Students transfer data from their Getting Ready to Graph pages to your class graphs.

### Critical Thinking DATA DISCUSSION CARDS

Objective: Students will interpret data collected in their observation journals by discussing, comparing, and calculating lengths of time for stages of the life cycle.

### Blank graphs FROM CATERPILLAR to CHRYSALIS

### APPLY & ASSESS Read-A-Graph task cards

Procedure:

Use the Read-A-Graph cards for students to apply their skills or as an assessment as students answer questions about the data and types of graphs pictured. Prep the cards by copying on white card stock and laminating.

Choose How You Use It:

Use the cards as an assessment, extension, or math station. Cards can be placed on a ring, stacked in a deck, or taped around the room for students room and write their answers in the matching numbered space on the recording sheet.

### APPLY & ASSESS Read-A-Graph task cards

Procedure:

Use the cards as an assessment, extension, or math station. Cards can be placed on a ring, stacked in a deck, or taped around the room for students room and write their answers in the matching numbered space on the recording sheet.

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Step-by-step directions & teacher notes to guide you through graphing the life cycle with your students

# INTEGRATE MATH *into* SCIENCE

Raising caterpillars to  
**BUTTERFLIES**

AROUND the KAMPFIRE

**CATERPILLAR TO CHRYSALIS**  
How long did it take?

Stage	Duration (days)
Caterpillar	5-6 days
Caterpillar	7-8 days
Caterpillar	9-10 days
Caterpillar	11-12 days
Caterpillar	13-15 days

**CHRYSALIS TO BUTTERFLY**  
How long did it take?

Stage	Duration (days)
Chrysalis	5-7 days
Chrysalis	8-9 days
Chrysalis	10-12 days
Chrysalis	13-15 days

GRAPH THE LIFE CYCLE *Linda Kamp*

Integrate math while raising live butterflies and practice important skills!

Happy teaching!

♥ *Linda*

