

Day 1:

- As you know, face masks to protect against common viruses are all the rage right now. These simple masks can spare one from contracting certain contagious diseases as it prevents you from touching your face (i.e. spreading germs). You have been given an unlimited amount of money AND unlimited possibilities. Your challenge is to create a face mask that ALL people would want to buy and use. Similar to our Styrofoam cup product improvement, I want you to use your imagination to make your simple face mask into a masterpiece. Please include the following:
 - ✓ Brainstorm list of possible modifications to the current mask
 - ✓ Annotated sketch of your final design
 - ✓ Approximate amount of time it will take your company to produce these for the general public.

Day 2:

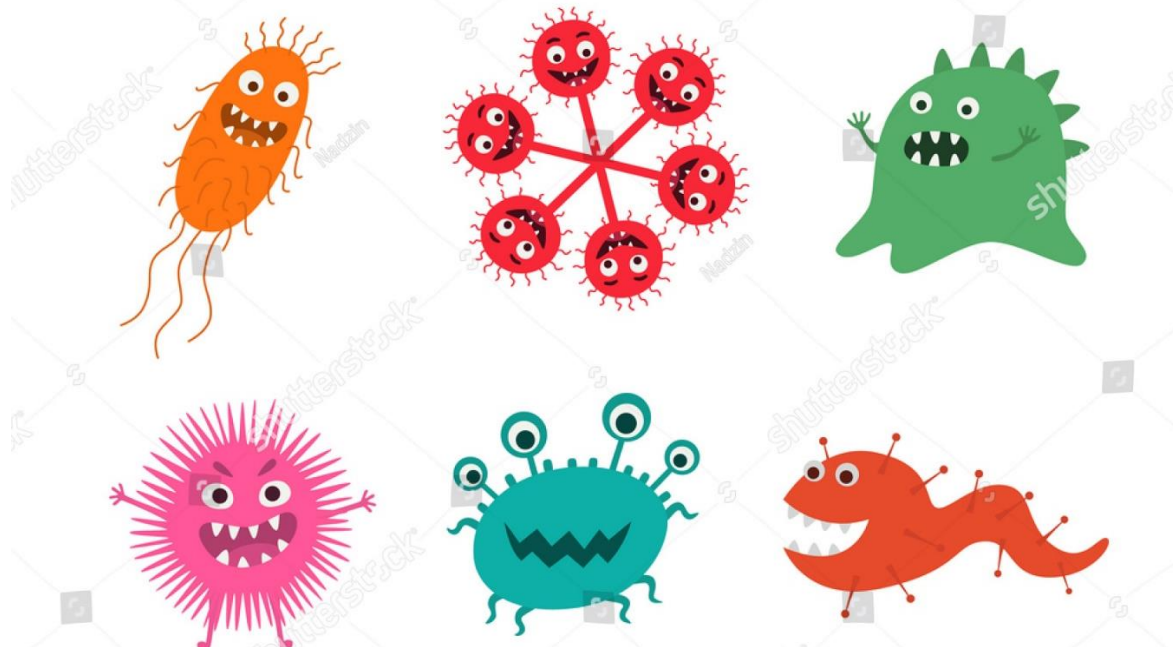
- Sanitation, sanitation, sanitation! Complete a concept sketch incorporating shading, proper scale, and many details of a cleaning item found in your house. For example, Clorox wipes or dish washing liquid will work! Please include a title and your signature on the final sketch. (Refer to 1.3: Concept Sketching and your Sketching Guide for more help.)

Day 3:

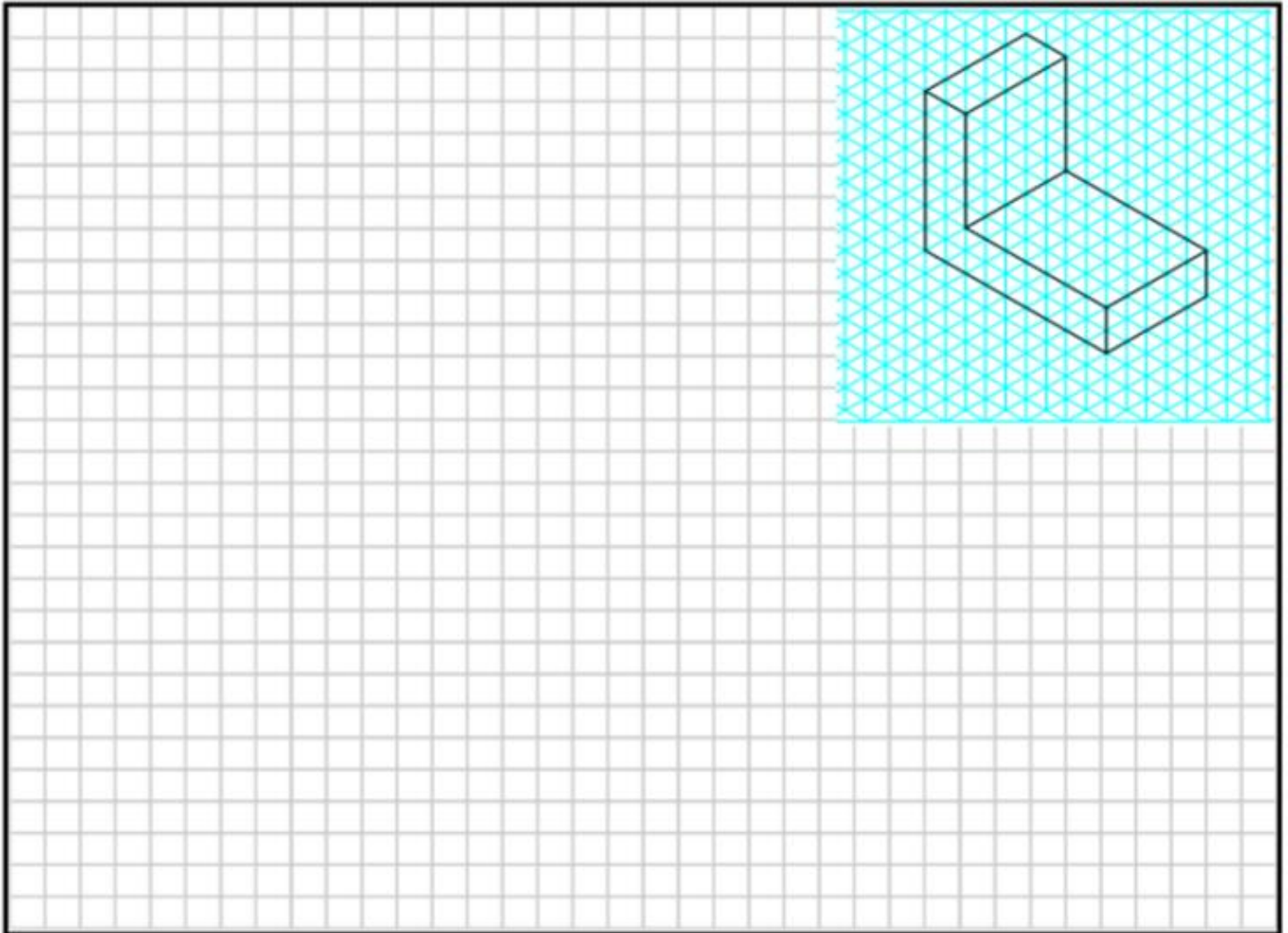
- As we've discussed, engineers are problem solvers! In our world right now, engineers, health care professionals, politicians, etc. are all working on the same problem. How to prevent the spread of COVID-19! These CDL days are an example of the beneficial measures that have been taken. Your assignment is to write me a full page of your solutions to this problem. Keep everything G-rated as this is a school project! How would you help prevent the spread of common viruses such as COVID-19? Examples include shutting down subway systems, requiring everyone to wear a mask, etc. **Engineers, what are your solutions??**

Day 4:

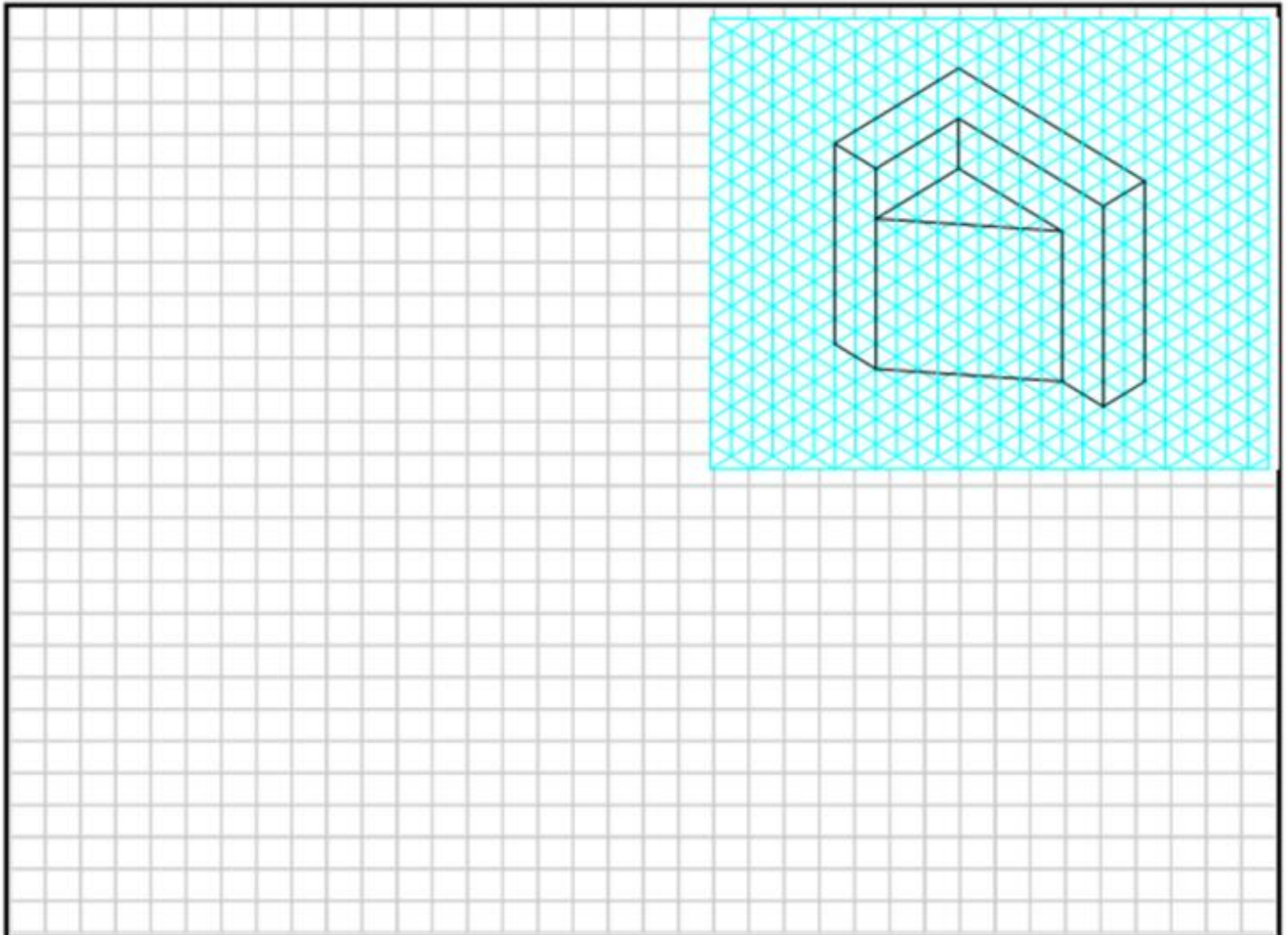
- Have you ever watched Osmosis Jones? My biology teacher in high school used to show it to us. I loved it! In the end, the virus didn't stand a chance! Your challenge for today is to sketch a character for the COVID-19 as well as the "hero" that defeats the virus. (Google "Osmosis Jones" if you want to see more detailed characters, but the below picture can represent more simplistic characters.) Keep it G-rated, but be creative!



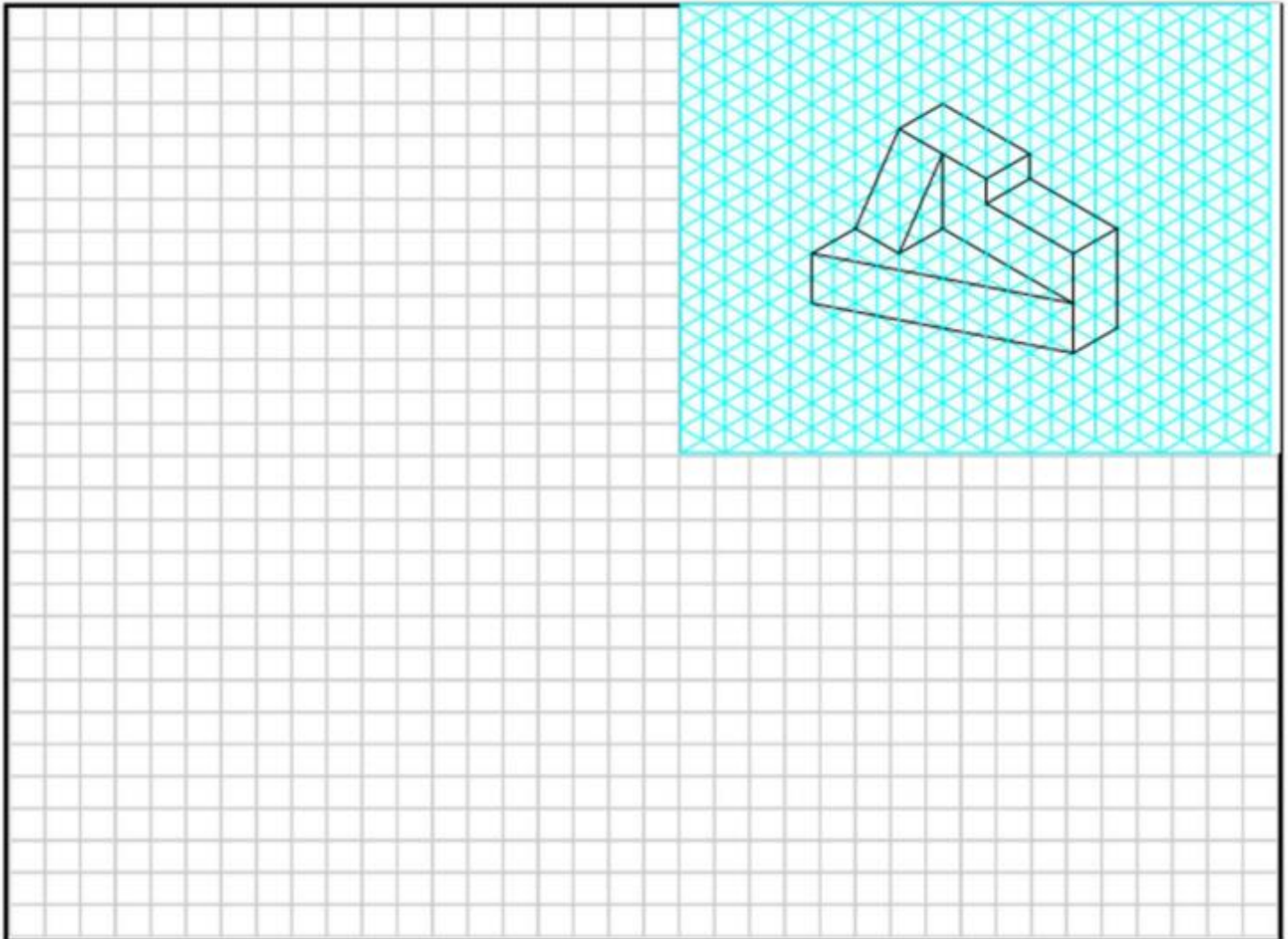
- Create a Multiview sketch from the following orthographic view. You need a front view, a top view, and a side view of each. The scale is 1:1 meaning each block on the isometric view is one block on your regular graph paper.



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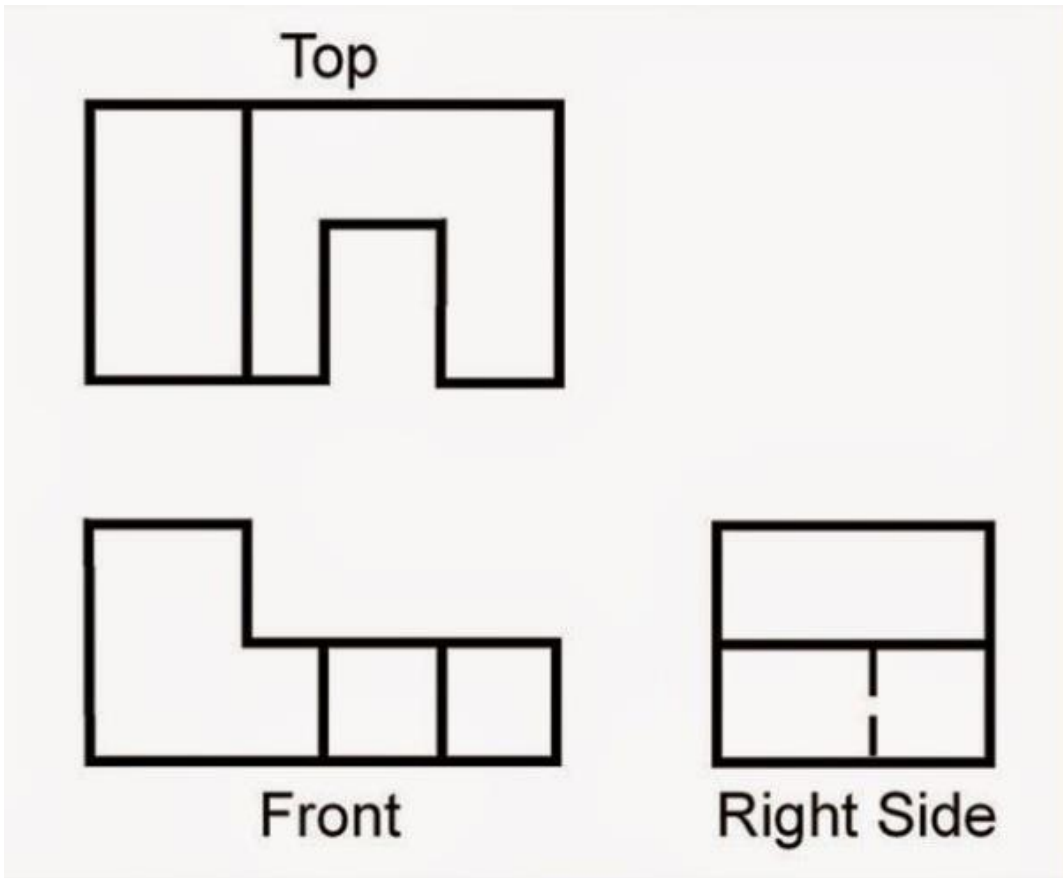


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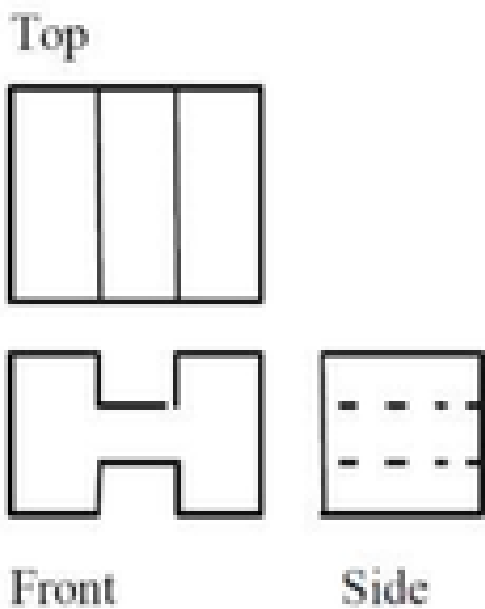
Day 8:

- Create the isometric view of this object depicted by the following multiviews. USE ISOMETRIC GRID PAPER.



Day 9:

- Create the isometric view of this object depicted by the following multiviews. USE ISOMETRIC GRID PAPER.



Day 10:

- Similar to 3.2: Unit Conversions, complete the following questions. Refer to your engineering formula sheet for the conversion factors!

1. What conversion factor should be used to convert from Gigaliters to liters?
2. Convert each of the following quantities to the indicated units. Use the appropriate number of significant figures to express your answer unless otherwise indicated.
 - a. 0.005098 Megaliters to liters. Record your answer in whole liters.
 - b. 57.2 inches to feet.
 - c. 4 ft – 6 $\frac{1}{2}$ in. to inches. Record your answer in fractional inches.
 - d. 6 ft – 9 inches to decimal feet. Record your answer to the nearest hundredth of a foot.
 - e. 935.6 inches to yards. Round your answer to the nearest hundredth of a yard.
 - f. 23.5 million nanometers to millimeters
 - g. 98.6 inches to meters.
3. The width of a strand of fiber is 19.2 micrometers. If 1500 strands are adhered side by side, how wide would the resulting fabric be if measured in centimeters?

- Find the mean, median, mode, and range of the following data sets:

MEAN, MEDIAN, MODE AND RANGE SHEET 5



Find the mean, median, mode and range in each of the sets of data.

1)	61, 57, 49, 60, 45, 51, 57, 60, 53, 57, 55, 48, 65, 52			
order	45,			
	Mean	Median	Mode	Range
2)	129, 113, 110, 123, 112, 115, 110, 124, 121, 113, 115, 121, 115			
order				
	Mean	Median	Mode	Range
3)	14, 7, 4, 8, 12, 4, 2, 9, 7, 11, 15, 12, 11, 11, 8, 11, 7			
order				
	Mean	Median	Mode	Range
4)	83, 77, 81, 79, 85, 77, 76, 72, 87, 81, 83, 77, 91, 81, 77			
order				
	Mean	Median	Mode	Range
5)	0.7, 0.2, 0.9, 1.2, 1.5, 0.4, 0.6, 0.2, 1.1, 0.3, 0.7, 0.2, 1.1			
order				
	Mean	Median	Mode	Range
6)	6.2, 5.6, 4.9, 5.1, 6.2, 5.7, 5.1, 4.7, 5.4, 6.2, 4.5, 6.4			
order				
	Mean	Median	Mode	Range

Day 12:

- Research or create an instant challenge for future use! Record the problem, needed materials, and procedures of the instant challenge. Try to find one you find interesting. A few of you have already done this in class, so choose a different challenge this time, please.