

Name: \_\_\_\_\_

Period: \_\_\_\_\_

Skyscraping

Phase 1-a

## **WHAT'S IMPORTANT?**

Driving Question: *What are the important considerations for constructing a tall building in today's world?*

Your Task: Using the web links on the IA Geometry website ([www.ia-geometry.weebly.com](http://www.ia-geometry.weebly.com)) and any other sources that you choose (Google and Wikipedia, for example), research the following topics as you begin planning your building. You may complete the boxes in any order, but each section must be verified and checked off before moving on to Phase 1-b.

### **AESTHETICS**

Aesthetics means...

How does it apply to buildings?

What do you think is aesthetically pleasing in the buildings that you have examined? Why did you like it?

What did you think was NOT aesthetically pleasing? Why did you NOT like it?

### **SUSTAINABILITY**

Sustainability (green) in buildings means...

What are some examples of sustainability? (Help: Look at Taipei 101 and Empire State Building)

What is LEED? What is its purpose?

What are the challenges and costs? Are these costs "paid back" or "recovered" during the life of the building? How (or not)?

## HEIGHT

What are the challenges to constructing a tall building?

Why is it important to consider the geographic location of the building?

## COSTS

Building prices are often compared on a “per square foot” (or “per square meter”) basis. To calculate that price, use the following formula:

$$\text{Cost per square foot} = \frac{\text{Total building cost}}{\text{Total floor area of building in square feet}}$$

For example, the average cost per square foot of a home in Hayward is calculated as follows:

$$\frac{\text{Average value of homes in Hayward}}{\text{Average floor area in square feet}} = \frac{\$310,000}{1445 \text{ sq. ft.}} \approx \$215 \text{ per square foot}$$

Calculate the *cost per square foot* of the following buildings (look them up on Wikipedia):

*Burj Kalifa:*

*Taipei 101:*

*Petronas Towers:*

*One World Trade Center:*

*One other tall building of your choice:*

What do you notice about the price of skyscrapers compared to a house in Hayward? Why do you think there is a difference?

What ways could you finance the construction? (Again, look at some of the buildings listed here.)