SPRUCING UP KALAKAUA MIDDLE

Summer, 2010

Seeking Junior Architects

Kalakaua Middle School will be sprucing up its library with renovations for the next school year. The designers are seeking junior architects to measure, draw, and build a scaled three-dimensional model of the school campus including all major buildings to be displayed in the school library.

Sprucing up Kalakaua Middle

SEEKING JUNIOR ARCHITECTS

Phase 1

Each team will measure one type of building and make a linking cube model **representation** of it.

Building types include:

1. Administration
2. Library
3. Cafeteria
4. Two-Story Classroom Building (R, N, O, E, L)
5. Portable Classrom (P6, P7, P8, P9, P11, P12)
6. Elective Classrooms (U101, U102, K102, K101)

Phase 2

Each team will draw **building plans** to include:

1. Front view
2. Right view
3. Base outline

Each team must also draw an **isometric view** of the building.

Phase 3

In the final stage, teams will draw a **two-dimensional net** of the building using the FabLab software, cut and assemble the building, and present the completed campus model to the library.

MEASURE • DRAW • BUILD • PRESENT

Design a New KMS Building for Students (Assessment)

Junior Architects: _____

Benchmark:

MA.6.7.1 Construct a two dimensional representation from different angles of a three dimensional object.

Task:

1. KMS is searching for ideas to add a building to improve student life of campus. Decide on the purpose of building:
   (ex. Shop to sell school supplies.)
   _____
2. Name your building idea: (ex. Kalakaua Stop)
   _____
3. Design the building using four different colored cubes.
4. Draw the **building plans** (base plan**,** front view**,** right view)
   (Use grid paper or dot paper.)
   Draw the **isometric** view. (Use isometric dot paper.)
5. Glue building plans and isometric view on a poster for presentation.
6. Using the **scale:** <u>1 cube side = 1 inch</u>**,** draw one cube on the FabLab Software.
7. Copy and paste 3 more cubes.
8. Select different patterns for each of the four cubes.
9. Stack the cubes to match the building you created.
10. Print and cut the **nets**.
11. Assemble the four paper cubes to match the building.
12. Prepare to propose your building to the principal.

Design Your Dream Home

Junior Architects (2): _____

Benchmark:

MA.6.7.1 Construct a two dimensional representation from different angles of a three dimensional object.

Task: Design a home of your dreams.

1. Select 2 or more different shapes to design your dream home. Each shape may be used more than once. List the shapes below:

   _____

2. Name your building (ex. Mike's Mansion):

   _____

3. Design your dream home on the FabLab Software. Home must not exceed two sheets of paper.
4. Select a texture to design your home.
5. Save your file on the flashdrive as "dream home". Flashdrive # _____
6. Print and cut the **nets**.
7. Tape your paper model together.
8. Sketch the **building plans** (base plan, front view, right view, top view) (Use grid paper or dot paper.) Try your best to draw the odd shapes.
9. Draw the **isometric** (front, right) view. (Use isometric dot paper.)
10. Write a paragraph about the features of your dream home. Type and print.
11. Create a poster to include building plans, isometric view, and paragraph.
12. Prepare to share your dream home with your team of architects.

Design a Candy Packaging

Designer: _____

Benchmark:

MA.6.7.1 Construct a two dimensional representation from different angles of a three dimensional object.

Task: M & M Company is seeking a new packaging to appeal to teens.

M & M Quantity: _____ Packaging Shape: _____

1. Measure one M & M in centimeters. Record measurement:

   _____

2. Calculate and list the dimensions of your packaging:

   (ex. Length = 7 cm, depth = 1 cm, height = 3 cm)

   _____

   Draw a sketch of packaging and label dimensions.

3. Package design should meet the following requirements:
   a. Neatly hold specified amount of pieces without unnecessary extra space.
   b. Include an image created by you.
   c. No blank sides.
   d. Name of candy and number of pieces clear and large.
   e. Appeal to your audience: _____
4. Save your file on the flashdrive as "candy". Flashdrive # _____
5. Print and cut the **net**. Tape your paper model together. Place candies inside.
6. Sketch the **building plan** (base plan, front view, right view)

   Draw the **isometric** (front, right) view.
7. Create a poster to include building plans, isometric view, 2 – 4 sentence commercial, and candy packaging.
8. Prepare to share your candy packaging with the M & M marketing team.