Surface Area Group Project

Objective: Determine, as a group, the equation for the surface area of a shape.

Description:

As a group of 4 or 5 students, you will produce a poster that will be able to provide information on a 3D object and its surface area.

Criteria:

Each poster must be on poster board and have:

- A title
- At least one example of where we would see this 3D shape
- A description of what 2D shapes make up the shape (what shape is each face)
- The general formula for finding the surface area of the shape
- At least two (2) nets (one must be labeled)
    - One folded up
    - One left flat (this one should be labeled)
- At least two questions with full solution (one cannot be a level 1 question.)
    - Level 1 questions: Given the dimensions of a shape, with a drawing, what is the surface area?
    - Level 2 questions: Given the dimensions of a shape, without a drawing, what is the surface area?
    - Level 3 questions: Given an example (ie a toblerone bar) and dimensions, what is the surface area?
    - Level 4 questions: Provide a drawing a determine if it represents a net for the shape (cannot be the same nets as given out in class)
    - Level 5 questions: Composite questions involving more than one shape.

Style:

Your group's poster can be done by hand or on the computer, but it must be neat and legible. Other people must be able to read your work.

Roles:

You will have a role, based on which card you drew. You can switch cards, but this must be done today.

Heart: Title and example(s)

Diamond: Description of faces and general equation

Club: Nets

Spade: Completing one question (at any level)

No card: Team leader and completing one question (cannot be a level 1 question)

Peer Review:

Your poster must be mostly complete by Feb 26. On this day, you will be split into groups and be given a chance to show a few other students your poster. This will help you make any last minute changes before it is due on the Feb 28.

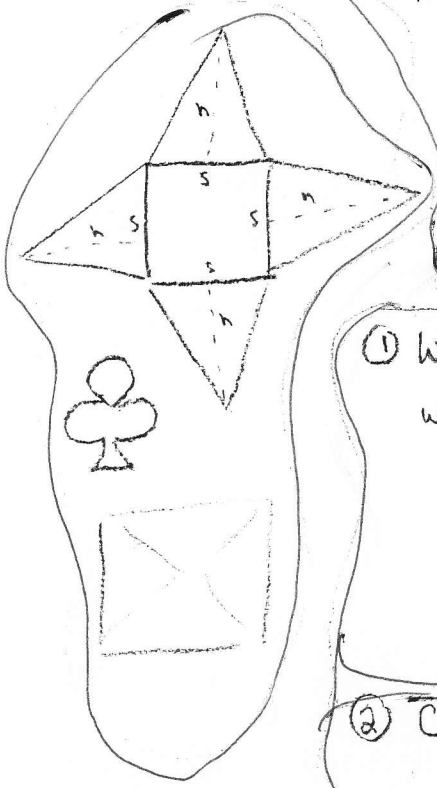
Presentation:

Each group will be responsible for presenting their poster to the class on Feb 28.

The surface area of a square pyramid

A square pyramid has one square face and four triangular faces.

Example:
pyramids of Giza



$SA = 1s$

Surface Area = 1 square area + 4 triangle areas.

$$\boxed{\text{Surface Area} = s^2 + 4sh}$$

① What is the surface area of a square pyramid with slant height 2cm and side length 1.5cm?

Answer: Surface Area $= (1.5\text{cm})^2 + 4(1.5\text{cm})(2\text{cm})$

$= 2.25\text{cm}^2 + 12\text{cm}^2$

$$\boxed{\text{Surface Area} = 14.25\ \text{cm}^2}$$

② Can this shape be a net for a pyramid?

$\boxed{\text{Yes}}$

group leader

Making A Poster : Surface Area Group Projects

Teacher Name: **Ms. Lysne**
Each group will fill one out for every group project that they see. Make sure that all members agree.
I will also be filling one out for each group presentation.

Name of Group Presenting: _____
Name of Group Observing : _____

CATEGORY	4	3	2	1
Required Elements: Title, Example(s), Description of object (what each face is), General formula to find Surface area for object, 2 nets for the object and 2 problems	The poster includes all required elements as well as additional information. (This could be extra nets or extra examples or extra questions).	All required elements are included on the poster.	All but 1 of the required elements are included on the poster.	Several required elements were missing.
Knowledge Gained: This will be accessed during the presentation.	Student can accurately answer all questions related to facts in the poster and processes used to create the poster. (For example: how did you make the nets for the poster?)	Student can accurately answer most questions related to facts in the poster and processes used to create the poster.	Student can accurately answer about 75% of questions related to facts in the poster and processes used to create the poster.	Student appears to have insufficient knowledge about the facts or processes used in the poster.
Level of questions asked	Both questions are level 4 or 5	Both questions are level 4 or 3	One question is level 3 and the other is 1 or 2	Both questions are level 1 or 2
Participation during presentation	All members were involved in the presentation, if members are shy about presenting, their contribution to the project must be made clear in the presentation.	Most members were involved in the presentation.	Half of the members were involved in the presentation.	One person appears to have done all the work for the presentation

Collaborative Work Skills : Surface Area Group Projects

Teacher Name: **Ms. Lysne**
This is anonymous, please be honest about the level of participation of the other members in your group.

Student Name: _____

CATEGORY	4	3	2	1
Working with Others	Almost always listens to, shares with, and supports the efforts of others. Tries to keep people working well together.	Usually listens to, shares, with, and supports the efforts of others. Does not cause disturbances in the group.	Often listens to, shares with, and supports the efforts of others, but sometimes is not a good team member.	Rarely listens to, shares with, and supports the efforts of others. Often is not a good team player.

Date Created: **Feb 18, 2013 12:07 am (CST)**

This page must be handed in by the end of class (one for each group)

Group Name:_____

Shape:_____

Team Leader:_____

Heart:_____

Diamond:_____

Club:_____

Spade:_____