

ALTERNATIVE EDUCATION

Module 11, Session 2 Small Group Activity 1

Given this information:

1. Figure out **current working area**:

Length = 24 ft.

Width = 18 ft.

2. Figure out **new working area**:

Length = 32 ft.

Width = 12 ft,

3. Determine the difference in the square footage of each room:

4. Given the difference, look at the amount of space each of the 9 workers need:

Option A. 1 Worker's Table = 6 feet by 4 feet

Plus tell pupils each worker needs 1 foot around table on each side so they need to figure out the space for each worker.

Option B: 1 Worker needs 8 feet by 6 feet (give pupils these dimensions)

1 Worker needs:

9 Workers need:

5. Have students make a decision about how many workers can fit in new area.

New working area =

9 workers need =

Option 1 (for pupil with minimal understanding of process)

Option 2 (for pupil with limited understanding)

Option 3 (for pupil with understanding of the process)

Option 4 (for pupil who noticed that the new space is equal to the space needed for 1 worker)

*Discuss with pupils the information they might want before making a decision about a worker.

COMPLETED Small Group Activity (Session 2)

*This is a sample of what the students may have developed.

*Students might decide to have pupils actually do some measuring to gain understanding of the concept of area (for example, measure the length/width of some familiar room and figure out the area; given this information, the teacher could provide carpet ads showing cost and having students figure out what it would cost to put a rug on the floor)

Given this information:

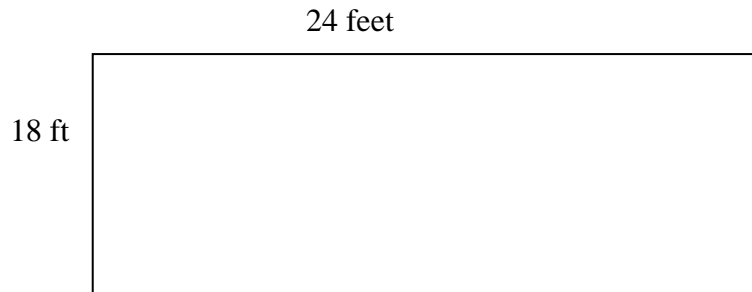
1. Figure out **current working area**: $A \#1 = L \times W$

$$\text{Length} = 24 \text{ ft.}$$

$$\text{Width} = 18 \text{ ft.}$$

$$\text{Area} = 24 \times 18$$

$$\text{Area} = 432 \text{ square feet (current working space)}$$



2. Figure out **new working area**: $A \#2 = L \times W$

$$\text{Length} = 32 \text{ ft.}$$

$$\text{Width} = 12 \text{ ft.}$$

$$\text{Area} = 32 \times 12$$

$$\text{Area} = 384 \text{ square feet.}$$



3. Determine the difference in the square footage of each room:

$$\underline{\mathbf{A\#2 - A \#1 = Difference}}$$

$$432 - 384 = 48 \text{ square feet (difference in 2 work areas)}$$

4. Given the difference, look at the amount of space each of the 9 workers need

Option A: 1 Worker's Table = 6 feet by 4 feet

Plus each worker needs 1 foot around table on each side

(8 Ft. by 6 Ft.)

Or

Option B: Each worker needs 8 feet by 6 feet

Have students draw working space to show length and width

1 Worker needs: 8 feet X 6 feet = **48 square feet**

9 Workers need: 48 feet X 9 feet = **432 sq. feet**

5. Have students make a decision about how many workers can fit in new area.

New working area = 384 square feet

9 workers need = 432 square feet

***new working area is 48 square feet less (432-384)**

Option 1 (for students with minimal understanding of process)

Guide pupils to thinking of the space as 384 sq. feet and that each worker needs 48 square feet, so that one could take the total and keep subtracting for each worker:

Total square feet – 1 worker's square footage

$$384 - 48 = 336 \text{ sq. feet (worker \#1)}$$

$$336 - 48 = 288 \text{ sq. feet (worker \#2)}$$

Continue until number of workers is found.

8 workers = 384 sq.

1 Worker needs to be let go

Option 2 (for pupils with limited understanding)

Have students start with the total square feet (384) as the number to add up to until they reach 384 sq. ft.

Worker #1 + Worker #2 = 96 square feet

96 sq. ft. + Worker #3 = 144 square feet

144 sq. ft. + Worker #4 = etc.

Pupils continue until they reach 384 square feet.

Have them look at the number of workers they were able to fit in.

384 square feet allows for 8 workers

1 worker needs to be let go.

Option 3 (for pupils with understanding of the process)

Assist students in developing a formula to determine the number of workers that can fit in the new room.

Given: each worker needs 48 sq. feet, total space is 384 sq. feet

1. X times 48 = 384
2. $X(48) = 384$
3. $48X = 384$
4. $X = 384/48$
5. X = 8 workers

Pupils will come to the conclusion that one worker needs to be let go.

Option 4 (for pupils who noticed that the new space is equal to the space needed for one worker)

Discuss that there is a 48 sq. foot difference in the two spaces. Each worker needs 48 sq. feet. The difference is equal to 1 worker's space. Therefore, there is room for 1 less worker. Only 8 workers can fit in the new working area.

*Discuss with pupils what information they might want before making a decision about a worker.