South Carolina Academic/Career Development Integration Activity (DRAFT)

Title   New Designs - Transformations (M-3)
Subject   Math   **Grade Level(s)**   8

SC Content Standard – Geometry Grades 6-8. Standard IV. Use visualization, spatial reasoning, and geometry modeling to solve problems. Expectation E. Recognize and apply geometric ideas and relationships in areas outside the mathematics classroom, such as art, science, and everyday life.
          IV-E.1 (8). Identify applications of transformations such as tiling, fabric design, art, and scaling.

National Career Development Guidelines Goal/Indicator
Career Management GOAL CM3. Use accurate, current, and unbiased career information during career planning and management.
          Indicator CM3.K5. Identify occupations that you might consider without regard to your gender, race, culture, or ability.

Career Development Objectives
1. Students will demonstrate an understanding of applications of transformations in everyday life.
2. Students will identify several occupations in which they might have an interest.

Assessment
1. Students will use transformations to draw a tessellation.
2. Students will give examples of occupations that use applications of transformations.
3. Students will identify at least three occupations in the South Carolina Arts, A/V Technology & Communications Career Cluster that might be of interest to them.

Preparation
• Prior Learning—Geometry Unit – transformations and tessellations, introduction to South Carolina's Career Clusters
• Handouts/Worksheets—*South Carolina Career Clusters* handout, *Exploring Occupations in the Arts, A/V Technology & Communications Career Cluster* worksheet
• Resources/Materials—writing materials, compass, protractors, Optional: access to computers and the Internet, library, SCOIS, O*Net (www.onetcenter.org), or other career information system
• Time Required—2 class periods

Procedures
Part One
• In this activity, students will use transformations to draw a tessellation. They will explore occupations that use the technique of transformations in their work.
• Review with students how to use transformations to draw tessellations. Share an example of a tessellation and have the students identify the transformations.
• Have students brainstorm some applications of transformations in every day life (e.g., tiles, mosaics, fabric design, and art).
• Tell students they are to create a tessellation for a specific purpose of their choice.
• After students have completed their tessellations, have them give a brief presentation to the class. Optional: display the tessellations on a bulletin board.

Part Two — Career Development Connections
• Give students a copy of the *South Carolina's Career Clusters* handout. Begin by reviewing the concept of career clusters.
• Have students brainstorm a list of occupations in the Arts, A/V Technology & Communications Career Cluster. What occupations in that career cluster might use the technique of transformations in their work?
• Ask students what occupations in the cluster might be of special interest to them.
• Ask students if they know anyone who works in an occupation found in the cluster. If so, discuss what the person does and where he/she works.
• Remind students about the importance of working in an occupation they enjoy and in which they can earn a good living.
• Give students a copy of the *Exploring Occupations in the Arts, A/V Technology & Communications Career Cluster* worksheet and review it with them.
• After students have completed the worksheet, have them share some of their ideas with the class.
• Optional: have students further explore occupations using SCOIS or O*Net or another career information system. Have students visit the local Career Center and explore the CTE programs there.

Crosswalks
SC Career Guidance Standard/Competency
Learning to Work Standard 1. Students will understand the relationship among personal qualities, education and training, and the world of work.
Competency 1.5. Identify a variety of traditional and nontraditional occupations.

Key Employability Skills
Thinking Skills—Critical thinking
Information Management—Acquires, interprets, and communicates information

South Carolina's Career Clusters

Agriculture, Food & Natural Resources
Processing, production, distribution, financing and development of agricultural commodities and natural resources.

Architecture & Construction
Designing, managing, building and maintaining the built environment.

Arts, A/V Technology & Communications
Creating, exhibiting, performing and publishing multimedia content.

Business, Management & Administration
Organizing, directing, and evaluating functions essential to productive business operations.

Education &Training
Providing education and training services, and related learning support services.

Finance
Financial and investment banking, insurance, and business financial management.

Government & Public Administration
Executing governmental functions at the local, state, and federal levels.

Health Science
Providing diagnostic and therapeutic services, health informatics, support services, and biotechnology research and development.

Hospitality & Tourism
Managing restaurants and other food services, lodging, attractions, recreation events, travel-related services.

Human Services
Providing for families and serving human needs.

Information & Technology
Designing, supporting, and managing hardware, software, multimedia, and systems integration.

Law, Public Safety & Security
Providing legal, public safety, protective, and homeland security services.

Manufacturing
Processing materials into intermediate or final products.

Marketing, Sales & Services
Performing marketing activities to reach organizational objectives.

Science, Technology, Engineering & Mathematics
Performing scientific research and professional technical services.

Transportation, Distribution, & Logistics
Managing movement of people, materials, and goods by road, pipeline, air, rail, and water.

Exploring the Arts, A/V Technology & Communications Career Cluster

Name_____   Date_____

1. Describe the general characteristics of occupations in the Arts, A/V Technology & Communications Career Cluster.

2. List 3 occupations from the career cluster that might be of interest to you.

   a. _____

   b. _____

   c. _____

3. What high school courses would help you prepare for these occupations?

4. What education/training after high school is required for these occupations?

   a. _____

   b. _____

   c. _____