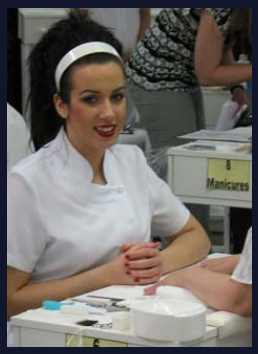
SKILLS COMPÉTENCES CANADA

Skilled Trades and Technology Week in Canada

November 2 to 8, 2009



WWW.SKILLSCANADA.COM

SKILLED TRADES AND TECHNOLOGY WEEK IN CANADA

What is it?

Skills/Compétences Canada (S/CC) will be promoting and hosting events to raise awareness of skilled trades and technology careers to parents, youth and the general public. This is an opportunity for organizations across Canada to get involved in a "hands-on" way to promote these careers to youth.

When is it happening?

November 2 to 8, 2009.

Why is it happening?

It is clear that skilled trades and technology careers are important for our economy and that they are an excellent career path for many young Canadians. However, many young Canadians either do not know what trade careers look like or what they entail. This week of events and information will provide young Canadians a peek into what career options are available.

Skills/Compétences Canada's plan is to facilitate and host skilled trade and technical activities in regions across Canada, to engage business and political leaders in discussions about the importance of these careers to our country and to focus the attention of the media on these careers. S/CC's long-term goal is to create an annual week of celebration of skilled trade and technical careers and to highlight those that pursue these paths for themselves.

Where is it happening?

It can happen anywhere in Canada!

How to participate?

Individuals or groups may participate through the local S/CC office activities, or organizations can host their own events to promote skilled trades and technology careers under the banner of Skilled Trades and Technology Week in Canada. As an example of some activities going on in Canada various S/CC offices are hosting events that may range from in-school presentations to skilled trades obstacle courses to cardboard boat races.

If you would like to host your own event and be added to the S/CC press release and media package, please contact either your local S/CC office or email your event details by not later than October 26th to Cynthia Faubert at cynthiaf@skillscanada.com

Be sure to include the event name, description, location, time and a contact person for the event.

Who to contact?

S/CC organizations and many others in Canada will be hosting events this week. To learn more details about what is happening in your area, contact your local S/CC office.

S/CC national office is focused on the national picture of promotion of all the events that are being held under the umbrella of Skilled Trades and Technology Week in Canada.

Below is a list of the S/CC offices in Canada for more information:

National Secretariat
Contact: Cynthia Faubert
Tel: (819) 771-7545 x4
Email: cynthiaf@skillscanada.com

Alberta
Contact: Shawna Bourke
Tel: (780) 493-2774
Email: shawnab@skillscanada.com

British Columbia
Contact: Adam Thorvaldson
Tel: (604) 432-4362
Email: adam@skillscanada.bc.ca

Manitoba
Contact: Maria Pacella
Tel: (204) 927-0250
Email: skillsmb@mts.net

New Brunswick
Contact: Luc Morin
Tel: (506) 457-2762
Email: lucm@skillscanada.com

Newfoundland and Labrador
Contact: Carole Ann Ryan
Tel: (709) 739-4172
Email: newfoundland@skillscanada.com

Northwest Territories
Contact: Jan Fullerton
Tel: (867) 873-8743
Email: skillsnt@northwestel.net

Nova Scotia
Contact: Courtney Gouthro
Tel: (902) 424-5180
Email: courtneyg@skillscanada.com

Nunavut
Contact: Michelle Jacquard
Tel: (867) 975-6574
Email: mjacquard@gov.nu.ca

Ontario
Contact: Alain Robineau
Tel: (519) 749-9899 ext. 223
Email: arobineau@skillsontario.com

Prince Edward Island
Contact: Collin K. Affleck
Tel: (902) 566-9352
Email: collin.affleck@aliant.ca

Québec
Contact: Claude Bourque
Tel: (418) 646-3534
Email : info@competencesquebec.com

Saskatchewan
Contact: Conrad Pura
Tel: (306) 683-0404
Email: conradp@skillscanada.com

Yukon
Contact: Dan Curtis
Tel: (867) 668-2736
Email: danc@skillscanada.com

What to do when it is over?

Contact your local S/CC offices and let us know how it all went for you, how it could be better and what you think we can do differently next year. This step is very important for S/CC. Making this week of events better every year is our main goal.

What might Skilled Trades and Technology Week in Canada 2010 be like?

S/CC hopes that 2009 is successful enough for us to pursue the following goals for 2010:

- Increase participation numbers across the country, both number of events and participants at the events themselves.
- To increase the media presence and focus on the events

Of course, any ideas or feedback from regional organizers and participating teachers and business representatives will greatly help us to improve this week for all participants.

Canada
This project is funded by the Government of Canada

IN-SCHOOL ACTIVITIES*

Activities to explore skilled trades and technology careers

There are many interesting ways to explore skilled trades and apprenticeship with your students. This section includes a number of classroom activities to get your students thinking about the skills and knowledge required to perform a trade. You will also find a number of "Quick Tips" to get you started.

QUICK TIPS

- Invite a skilled tradesperson to your classroom to talk about their occupation. Tradespeople can be found through:
  - local businesses
  - trade associations
  - labor groups
  - community colleges

- Contact your local **Skills/Compétences Canada** office nearest you. Their staff would be happy to help you organize a classroom presentation about skilled trades for your students.

- Organize a field trip for your students to a skills competition in your region. These exciting Olympic-style skills competitions showcase students' technical and leadership skills. Students participate in practical challenges designed to test skills required in technology and trade occupations. For more information, contact the Skills/Compétences Canada office nearest you.

- Assign a research project on a skilled trade. Start by dividing your class into groups. Have each group select a trade they are most interested in. Have them write down their initial perceptions and knowledge of their chosen trade.
  Then have each group research their trade to identify:
  - the duties involved.
  - the education and skills needed to perform the trade.
  - the wage and the number of hours generally worked.
  - the work environment.

  Finally, have each group make a presentation on their trade to the class. Make sure they talk about their initial perceptions and how they are different from the reality of the trade.

* This information has been adapted/modified from the "Skilled Trades: A Career You Can Build On" Educators Toolkit. This toolkit is available online at www.careersintrades.ca or from Skills/Compétences Canada upon request.

Test Your Student's Skilled Trades and Technology IQ

Discover how much your students really know about skilled trades, and allow them to find out for themselves whether they're an apprentice, a journeyperson or master journeyperson! This fun and interactive quiz can be used to spark a dynamic discussion about skilled trades.
Good luck and have fun!

TEST YOUR SKILLED TRADES AND TECHNOLOGY IQ

Are you an apprentice, journeyperson or master journeyperson?

Skills Shortage

1. By what year will Canada have a shortage of 1 million skilled workers?
    a. 2010
    b. 2025
    c. 2015
    d. 2020

2. What percentage of the Canadian workforce will be eligible to retire in the next 5 to 10 years?
    a. 58%
    b. 8%
    c. 38%
    d. 28%

3. What percentage of current tradespeople plan on retiring within the next 7 to 10 years?
    a. 25%
    b. 50%
    c. 75%
    d. 35%

4. How many workers in the manufacturing sector will be needed in the next 15 years due to retirement?
    a. 100,000
    b. 200,000
    c. 500,000
    d. 400,000

About Skilled Trades

5. What percentage of new jobs will be in the skilled trades and technology sectors in the next two decades?
    a. 70%
    b. 40%
    c. 60%
    d. 30%

6. How many skilled trades occupations are available in Canada?
    a. over 150
    b. over 200
    c. over 50
    d. over 100

7. While the average national salary for a Canadian is $40,000/year, what is the average salary of a certified skilled tradesperson?
    a. $35,000/year
    b. $70,000/year
    c. $50,000/year
    d. $60,000/year

8. Skilled trades fall under four main sectors of the economy. What are they?
    a. transportation, manufacturing, business administration, health sciences.
    b. construction, transportation, earth sciences, service.
    c. service, manufacturing, construction, transportation.
    d. business administration, construction, service, transportation.

About Apprenticeship and Education

9. What is the average debt of a university student at the end of his or her studies?
    a. $5,000
    b. b. $10,000
    c. c. $15,000
    d. d. $20,000

10. What is the percentage of students that graduate and complete college or university?
    a. 40%
    b. 65%
    c. 20%
    d. 80%

11. Red Seal certified workers:
    a. have completed their apprenticeship training.
    b. can work anywhere in Canada where their trade is designated.
    c. have passed an inter-provincial exam.
    d. all of the above

12. What was the base salary (not including vacation pay) of a general carpenter apprentice in his or her first term in 2003? (Hint: It is 50% of the wage earned by a certified carpenter.)
    a. $8.64/hour
    b. $12.50/hour
    c. $21.07/hour
    d. $14.49/hour

13. What is the ratio of on-the-job to in-school training for an apprentice during the full length of his or her apprenticeship?
    a. 60% classroom training : 40% on-the-job training
    b. 80% classroom training : 20% on-the-job training
    c. 20% classroom training : 80% on-the-job training
    d. 40% classroom training : 60% on-the-job training

14. What does an apprentice receive after successfully completing his or her apprenticeship?
    a. a permit.
    b. a certificate of qualification.
    c. a record of achievement.
    d. a diploma.

15. What are some of the steps involved to completing an apprenticeship?
    a. Finish high school and find a trade that suits you.
    b. Find an employer.
    c. Register as an apprentice.
    d. All of the above.

16. Approximately how many apprentices were registered in Canada in 2003?
    a. 236,000
    b. 525,000
    c. 248,000
    d. 62,000

ARE YOU...

Just getting started (0-9)

This is the perfect opportunity to learn as much as you can. If you're thinking about careers and are not sure where to start, or where your interests lie, be sure to check out www.jobfutures.ca and take the "Know Yourself Quiz." It's a great place to start!

An Apprentice (10-11)

Congratulations! You're ready to start your journey as a skilled tradesperson. With a little bit of work you too can gain a "Certificate of Qualification!" For more information about skilled trades and technology in your area, go to www.apprenticetrades.ca.

A Journeyperson (12-13)

That's the ticket! You've got the knowledge; now you just need the experience. Apprenticeship can even start in high school. Your guidance counselor will know tons of information on skilled trades – including how much of a rewarding experience it can be! Go to www.careersintrades.ca to find out even more cool facts about skilled trades.

A Master Journeyperson (14-16)

Wow! You've definitely demonstrated the aptitude and knowledge of a master journeyperson – a definite challenge. Visit www.red-seal.ca to find out how you can earn while you learn and travel across the country!

Test Your Skilled Trades and Technology IQ

ANSWER GUIDE

Skilled Shortage

1. **D,** 2020 (Conference Board of Canada)
2. **B,** 48% (Statistics Canada)
3. **B,** 50% (Information Technology Association of Canada)
4. **D,** 400,000 (Canadian Manufacturers and Exporters, Ensuring the Future of Canadian Manufacturing, February 2005)

About Skilled Trades

5. **B,** 40% (Information Technology Association of Canada)
6. **B,** Over 200 (Canadian Apprenticeship Forum)
7. **C,** $50,000 (www.schooltocareer.ca)
8. **C,** service, manufacturing, construction, transportation

About Apprenticeship and Education

9. **D,** $20,000 (The Daily, 4/26/04, Statistics Canada)
10. **A,** 40% (www.schooltocareer.ca)
11. **D,** all of the Above (Red Seal, Canada, www.red-seal.ca)
12. **D,** $14.49/hour (Carpenters' Local Union 27 Joint Apprenticeship & Training Trust Fund Inc.)
13. **B,** 80%, 20%
14. **B,** a certificate of qualification
15. **D,** all of the above
16. **C,** 248,000 apprentices (Statistics Canada)

Classroom Activity 1

WE ALL SCREAM FOR ICE CREAM

Trade Link: Cook/Chef

(A tasty activity on chemical reactions and heat transfer)

TEACHER BACKGROUND

Duration: one (1) 45 minute class.

Group Size: small groups of 4 students (or smaller if you have sufficient supplies).

Setting: **indoors (classroom).**

RATIONALE

At this level, students explore properties of fluids and use the particle theory to explain their observations. They also learn about chemical reactions and try to relate them to their own experiences. Cooks take advantage of this knowledge in their preparation of foods. Kitchen chemistry can involve a range of scientific principles from the simplest to the most complex.

METHOD

In this activity, you will cool down milk, sugar and vanilla by putting the solution in a test tube and placing it in a container filled with an ice and salt mixture. It will cool down enough to freeze. In essence, the salt and ice takes heat away from the milk solution.

MATERIALS

- Soup can, coffee can or small metal container.
- A test tube or baby food jar.
- 10ml of salt.
- Crushed ice.
- Celsius thermometer.
- 15 ml homo milk (or half and half cream).
- Pinch of sugar.
- Vanilla.
- Swizzle stick, popsicle stick or thin stick (for stirring). about 15cm long.

GETTING STARTED

Chemical reactions have become a part of our everyday life. They are all around us. You may have learned how we can affect the properties of some objects by adding new substances to them. In some places, in the wintertime, people add salt to roads to lower the freezing point of water. This helps to keep roads free of snow and ice. In this activity, you will take advantage of this scientific principle and get a “tasty” result.

* The activity 1 is based on a resource called “Making Connections: Linking Science and Math with Trades and Occupations,” developed by the NWT Apprenticeship and Occupational Certification.

THE ACTIVITY

1. Put crushed ice in the metal container so that it is about 1/2 full.
2. Add 10 ml of salt to the ice and stir until the temperature is between -8 degrees Celsius and -10 degrees Celsius.
3. If the temperature is not low enough, add more salt and keep stirring.
4. Put 15 ml of milk (or half and half), a pinch of sugar and one drop of vanilla into a CLEAN test tube (or baby food jar).
5. Place the test tube in the metal container and pack the ice around it.
6. Stir your mixture for the next 15 to 20 minutes until your ice cream is ready to eat.
7. Describe all the reactions (physical and chemical) which took place during this experiment.

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Challenge students to lift an ice cube floating in water out of a container without touching it. All they are allowed to use is a string and some salt. (Solution: salt lowers the freezing point of water, so when you put salt on the string and touch it to the ice, the ice cube under the string melts a little. As the ice melts, the air around it cools and causes the ice cube to refreeze and the string becomes frozen to the ice cube.)
2. Invite a cook to come into the classroom and talk about chemical reactions and food chemistry.

INFORMATION BITE

During your training as a cook, you will not only learn about kitchen safety and basic cooking principles, you will also learn advanced preparation technique for both small and large situations. A strong background in classification systems will assist you in learning about various types of foods such as sauces, stocks, soups, salads, fish, dairy products and cheeses, baked goods and desserts. Cooks are employed in hotels, restaurants, catering firms, cafeterias, institutions and isolated camps. Kitchen mathematics includes ratios, recipe conversions, fractions, decimals, and working with invoices and orders.

Classroom Activity 2

GOING UP?

Trade Link: Inspector (Electrical)

(An activity on hydraulics)

TEACHER BACKGROUND

Duration: one (1) 45 minute class.
Group Size: small groups of 2-3 students.
Setting: indoors (classroom).

RATIONALE

Students, when studying fluids and hydraulics, learn that fluids have special properties such as viscosity, density, buoyancy and compressibility which are useful in industry and in our daily lives.

Most people think of liquids when they hear the word “fluids”, but gases are also fluids. These concepts, combined with a basic understanding of Pascal’s law have led to numerous inventions such as hydraulic and pneumatic which are used every day by heavy duty equipment operators and mechanics. Systems that use fluids to transfer forces are called hydraulic systems.

METHOD

This activity should be done over a sink. Students create a hydraulic press using two identical syringes connected by plastic tubing. The experiment can be repeated using one large and one small syringe. In both scenarios, the moving part of the syringe represents a movable piston. Students can use their sense of touch to compare the amount of force required in both cases to move an identical object resting on the larger sized syringe.

MATERIALS

- Two identical syringes (approximate 60ml size).
- One syringe (10ml).
- Beaker or glass of water.
- Plastic tubing approximately 100cm in length (airline tubing for aquarium filters works well).
- Clamps and retort stands to hold syringes (optional).
- Heavy object or weights (kg).

GETTING STARTED

The study of fluids and their various properties such as buoyancy, density, viscosity and compressibility has led to inventions which have helped us to do work or make our lives easier. These systems are called hydraulic systems. In this activity, you will design a hydraulic press.

THE ACTIVITY

1. Connect two identical large syringes (plungers removed) with plastic tubing (100cm in length).
2. Add water to one until both syringes are full.
3. Keeping the two syringes level, place a plunger into one syringe, pushing it all the way in.
4. Place the second plunger into the open syringe, pushing gently until both plungers are halfway down. You now have a closed system with no air in it.
5. The syringes should be level and held carefully or supported on retort stands with clamps. Place a small weighted object on top of one of the syringe plungers and push against the other plunger to make it rise. You will need to compare the force used to raise the object in this activity with the force needed in the activity identified in the next step.
6. Repeat this experiment using one syringe from the previous activity and a second smaller syringe. Compare the force needed to move the same weighted objects (placed on the larger plunger) as in the first activity. Which activity required the least amount of force?

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Repeat experiment using a 10ml and a 100ml syringe (if available). Were the results what you expected?
2. Design an experiment to show if the type of liquids used affects the results.
3. Test to see if the experiment will work using “air” as your liquid.
4. Design posters on elevator safety or handicap lifts to promote safety among younger students at your school.
5. Find out how often lift devices in your school are inspected and by whom?

INFORMATION BITE

To be an electrical and/or elevator inspector requires a journeyperson ticket as an electrician and/or elevator constructor. Elevator constructors train to install, modify, service and repair electrical and hydraulic elevators, hoists, moving walkways, and escalators. Electricians learn about electrical systems, controls and switches, heating and cooling systems, electronics and lighting. To be successful in either trade, you will need mechanical aptitude, the ability to do detailed and precise work, the ability to read blueprints, and a willingness to continually upgrade your knowledge and skill levels regarding new innovations in the industry. Inspectors generally have extensive experience in the trades area and work for government and/or regulator agencies.

Classroom Activity 3

KEEP YOUR COOL

Trade Link: Refrigeration and Air Conditioning Mechanic

(An activity on minimizing heat energy transfer)

TEACHER BACKGROUND

Duration: two 45 minute classes (includes taking temperature readings during the day).

Group Size: small groups of 4 students.

Setting: indoors (classroom).

RATIONALE

Heat is a form of energy very important to our lives and to our community. Students should have an opportunity to explore properties of heat through discovery. Students at this level learn about the kinetic molecular theory and the particle theory. They can explain heat loss or transfer using these theories.

METHOD

In this activity, students will be asked to design a device to minimize heat loss. Using classroom materials provided by the teacher, students will create a device to hold a container of ice cold water. Although the teacher provides generic materials for this activity, students should be encouraged to be creative and to identify other readily available materials for use in their designs.

The students will take the temperature of the ice cold water at the beginning of the activity and after each half hour until the end of the day or until the water's temperature is at room temperature. The data can be displayed in a graph that charts time versus temperature.

MATERIALS

- Container of ice water (plastic bottle, cup with lid, graduated cylinder, etc.).
- Tape (duct tape or masking tape)
- Materials for container could include cardboard, rigid insulation, plastic wrap, and tinfoil.

GETTING STARTED

Heat is a form of energy that people living in cold climates are very familiar with. In this activity, you will explore heat loss. The goal is to design a container that allows a cold liquid to stay cold for the longest possible time.

THE ACTIVITY

Day One:

1. In your group, brainstorm ideas on what your design might look like and what materials you would like to use.
2. Once you have a design in mind, make a sketch of it on a piece of paper and list all the materials you will be using on the same sheet of paper.
3. Before you build your prototype, have your teacher initial it to indicate that your design has been approved for construction.
4. Choose someone from your group to measure out 100ml of the ice cold liquid once you have built your prototype.
5. Place the container of ice cold liquid in your newly created design after you take a temperature reading of the ice water.
6. Take a temperature reading every half hour for the rest of the day or until you have to go home.

Day Two:

1. Plot a graph of temperature versus time to show your data, using your group's temperature readings.
2. Once everyone in the class has had a chance to record their data, determine which designs were the most effective.

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Try using different materials or improving on your design by combining the best ideas generated in various students designs.
2. Create different containers to hold the ice water and repeat the experiment using your original device.
3. Organize data in a spreadsheet (use of computer application optional).

INFORMATION BITE

As a refrigeration and air conditioning mechanic apprentice, you would learn about the science related to changes of state, heat and temperature, properties of coolants, compression, heating systems, electricity, equipment controls, gas laws, and small engines. Training involves ordering, assembling, installing, calibrating and testing of industrial and commercial equipment. You would work for companies that install and service air conditioning and refrigeration systems.

Classroom Activity 4

ONLY YOUR HAIRSTYLIST KNOWS FOR SURE

Trade Link: Hairstylist

(Chemical reactions involving the bleaching and/or streaking of hair)

TEACHER BACKGROUND

Duration: two (2) 45 minute classes.
Group Size: small groups of 4 students.
Setting: indoors (classroom).

RATIONALE

Modern chemistry is founded on the science related to atomic
theory. Chemical reactions have become such a common place in our daily lives that we take them for granted. Using examples that are part of a student's normal experience, such as hair coloring, can help create strong connections between theory and understanding. In this activity, students will explore the dyeing or bleaching of hair - a common trend among today's youth.

METHOD

Using clean hair (collected from hair stylist/barber shop, student volunteer or animal hair), students will experiment with the bleaching process and monitor color change over time. When dyeing hair, you will notice a gradual change over time. Students can leave the last piece of treated hair to sit overnight and check on it the next morning. This activity works best if you start with brown hair and use a commercial bleaching or streaking kit.

MATERIALS

- Bleach kit or streak kit for hair (available commercially).
- Hair- (ask hairstylist for a small bag of clean dark brown hair or have someone in class volunteer hair).
- Beaker or glass jar.
- Scotch tape.
- Pencil or stick.
- Stopwatch or watch with timer.

GETTING STARTED

Chemical reactions have become such a commonplace occurrence in our daily lives that we take them for granted. As you study atoms and elements, you will learn more about what happens when a chemical reaction takes place. In this activity, you will bleach or streak hair and observe the chemical reactions that take place over time.

Note: Black hair requires additional treatment to successfully bleach it.

THE ACTIVITY

1. In this activity, you will use six small samples of human or animal hair about 5-10 cm long.
2. Put tape around one end of each sample of hair. Put one of them on the side to use as a starting reference point. Tape remaining samples to a pencil (or other object) so that they are lined up in a row and hang down.
3. Treat each sample of hair according to the instructions included with the kit. Make note of the time.
4. At fifteen minute intervals, remove one sample of hair, rinse it with water and tape it to a piece of paper once it has dried.
5. Leave the last sample of treated hair to sit overnight and remove it the next morning.
6. You should have six samples of hair hanging on your sheet in the order in which they were removed from the chemicals. Beside each bundle of hair, write the number of elapsed minutes before it was removed.
7. What observation can you make?

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Repeat the experiment with different colored hair and try to predict the various color changes ahead of time.
2. Repeat the experiment using natural dyes such as lichens and berries.
3. Is there a relationship between hair color, thickness and dyeing time?
4. Invite a hairstylist to come in and do a demonstration of streaking techniques.

INFORMATION BITE

As Working with drawings and blueprints is a daily activity for a carpenter. This trade involves knowledge about the many materials used in construction, hand and power tools, and the science of building construction (footings, formwork, walls, roofs, floors, room finishes, etc.). An apprentice carpenter learns to construct, erect and repair structures and fixtures made of wood. Most carpenters are employed by construction contractors, are self-employed or perform construction or maintenance work for government agencies or manufacturing firms.

Classroom Activity 5

FEELING BOXED IN?

Trade Link: Carpenter

(An activity on geometry turning 2-D design (nets) to 3-D models)

TEACHER BACKGROUND

Duration: one (1) 45 minute class.
Group Size: individual.
Setting: indoors (classroom).

RATIONALE

This activity reinforces in the student's mind the prevalence of geometry in our everyday world. A simple design for a small cabin can be created when a 2-D design is translated into a 3-D model. The economics of packaging and design start on the 2-D plane and evolve to the 3-D product after much deliberation and study. One of the skills of carpentry is to be able to think freely between 2-D plans and 3-D products.

METHOD

In this activity, students do some backward design in terms of unraveling a pre-made package so that it looks like a 2-D polygon. The notion of not wasting any materials is important to the design and production processes. Students also do some forward thinking design by creating a 2-D polygon design that, when folded together, becomes their new 3-D "product". Students are asked to create a 2-D . floor plan of a small cabin or house which, when folded together, becomes the end product.

MATERIALS

- Various cardboard containers – herbal tea boxes, toothpaste box, spaghetti noodle box, Kraft Dinner box, file folder box, cereal box, milk carton, etc.
- Ruler.
- Graph paper.

GETTING STARTED

In this activity, you will move back and forth between two-dimensional plans and three-dimensional models. Many people who work from plans or blueprints have the ability to do this with relative ease. You can too, with a little practice.

THE ACTIVITY

1. Take one of the cardboard boxes provided and try “backward design” – carefully unwrap or unfold it until it is a flat two-dimensional object sitting in front of you. Keep in mind that when this package was designed, it started out as an idea on paper like this 2-D object, long before it was ever put together.
2. Fold your package from step 1 back together and try to imagine it being unfolded in your mind as you sketch it on a piece of graph paper. Unfold it and compare it to your sketch.
3. Imagine that you are going to build a design for a small cabin or house out of cardboard. Sketch on graph paper what it would look like. Remember - the idea is to design it in such a way that it can be cut out as one piece and folded (just like a model of a polygon) into the final product. Cut out your design, fold it together and see how it looks. Be sure to put in some flaps for gluing and taping.

BRANCHING OUT (EXTENSIONS AND VARIATIONS)

1. Transfer your design to balsa wood, styrofoam or bristol board and construct your model.
2. Try adding little extras to your original design such as a front porch, stairs, maybe even a garage.
3. Try working with a CAD (computer assisted drawing) program to develop your design.
4. Put your model house on a landscaped lot.

INFORMATION BITE

Working with drawings and blueprints is a daily activity for a carpenter. This trade involves knowledge about the many materials used in construction, hand and power tools, and the science of building construction (footings, formwork, walls, roofs, floors, room finishes, etc.). An apprentice carpenter learns to construct, erect and repair structures and fixtures made of wood. Most carpenters are employed by construction contractors, are self-employed or perform construction or maintenance work for government agencies or manufacturing firms.

Classroom Activity 6

TECHNO-QUILT

Trade Link: Printing and Graphic Arts

(A visual arts activity using iron-on transfers)

TEACHER BACKGROUND

Duration: one (1) 45 minute class.

Group Size: pairs or small groups of 2-3 students.

Setting: indoors – classroom with computers or computer lab.

RATIONALE

Images designed to convey specific messages are all around us. Billboards, advertisements and magazines geared to students use strong visual images to get their point of view across. In this activity, students design visual images which, when printed on a large white bed sheet via iron-on transfers, become a striking quilt (banner) used to convey a message to the rest of the school.

METHOD

You will need a commercial Iron-On T-shirt Transfer Kit in order to do this activity. Each package normally contains ten iron-on transfers. Students will need to follow the instructions that come with the kit closely. Kits are very clear as to which type of platform (IBM/MAC), software program (must be able to reverse images), sheet (cotton), and printer types can be used. Examples of a theme for visual presentation selected by the class include education week, science fairs or spirit week. In order to make the end result look like a quilt, specific c frames or border types could be used in each student generated transfer. This will give the impression of each sheet being closely linked to others.

MATERIALS

- Iron-on T-shirt Transfer Kit(s) i.e. HP Iron-On T-shirt Transfers, Invent It Iron-On Transfers.
- Sheet (cotton).
- Hand iron and ironing surface – formica counter, not ironing board or metal.
- Computer and graphics software (i.e. Adobe Photoshop) with the ability to flip horizontal or mirror the image, and a compatible printer.

THE ACTIVITY:

1. Your teacher will provide direction as you decide on a topic or theme to present. As a class, brainstorm possible images or symbols that might be created.
2. The iron-on transfer kit(s) you will be using comes complete with instructions as to which type of computer platform (IBM/MAC), software program (must be able to reverse images), and type of sheet (cotton), and printer types can be used. Read the instructions carefully.
3. Once your transfer has been generated on the computer, run a test print before using the actual transfer on your printer. Make sure your image is reversed and the printer is compatible with the transfers (check instructions).
4. Hand iron the transfers onto a white sheet to make it look like a quilt. (Hint: each image should have a recognizable frame or border pattern to give it a quilt-like look when put together.)

BRANCHING OUT (EXTENSIONS AND VARIATIONS):

1. Design a visual graphic for a Halloween loot bag and transfer your iron-on to a pillowcase. Use it as a door prize at a school assembly.
2. Design T-shirts for a special event, a school assembly or for student council elections.

INFORMATION BITE

The technology used by printing and graphic arts tradespeople has changed significantly over the past ten years, moving more and more to desktop publishing systems. Printing and graphic tradespeople generally work for printing and publishing companies and large corporations with in-plant printers. The length of apprenticeship is usually four years with related in-school training each year. To be successful in this trade, one needs good literacy and numerical skills, computer literacy, accurate color perception, the ability to pay careful attention to detail, and the ability to work under the pressure of deadlines.