

In Class Science & Technology Investigations



In order for students to be successful with science fair projects, they must first:

- have experience with a variety of investigative process skills (e.g., asking testable questions, observing, predicting, controlling variables, analyzing and interpreting data, evaluating & refining solutions, etc.)
- be familiar with the terminology of an experimental write-up (e.g., hypothesis, procedure, conclusion, etc.)

One resource that supports the teaching of students in acquiring the necessary skills is Smarter Science.

		Beginning	Exploratory	Emergent	Consolidated	Proficient
Engage	Initiate and Plan	Questioning Observing Searching	Inferring Inquiring Predicting	Hypothesizing Modeling	Investigating	
	- Ask Questions - Identify Need or Problem - Explore Answers & Solutions					
Explore	Plan, Perform, Record	Using Instruments Measuring Recording	Planning Designing Gathering Data	Constructing Inventing	Calibrating Experimenting	
	Science - Plan & Conduct - Collect Data Tech - Develop Possible Plans - Select & Carry Out Plan					
Explain	Analyze and Interpret	Comparing Contrasting Classifying	Outlining Graphing	Analyzing	Evaluating Reviewing	
	- Analyze & Apply Results - Identify Patterns - Evaluate & Refine Solutions					
Extend	Communicate	Discussing Explaining	Reporting Writing	Reflecting Teaching		

Type of Process Skill: Analytical, Organizational, Creative, Manipulative, Communicative

Adapted from research by Bonebrake, Rifkin and Pevard 2001

Smarter Science is a powerful approach that emphasizes inquiry-based teaching in the science and technology classroom. This approach:

- provides resources to help scaffold and structure the learning of science & technology while incorporating literacy, numeracy and investigation skills
- provides sample lessons that model teaching through inquiry/investigation for kindergarten through to grade 8
- integrates key literacy and numeracy skills
- is directly connected to the Ontario Curriculum by reinforcing big ideas and overall expectations for each grade

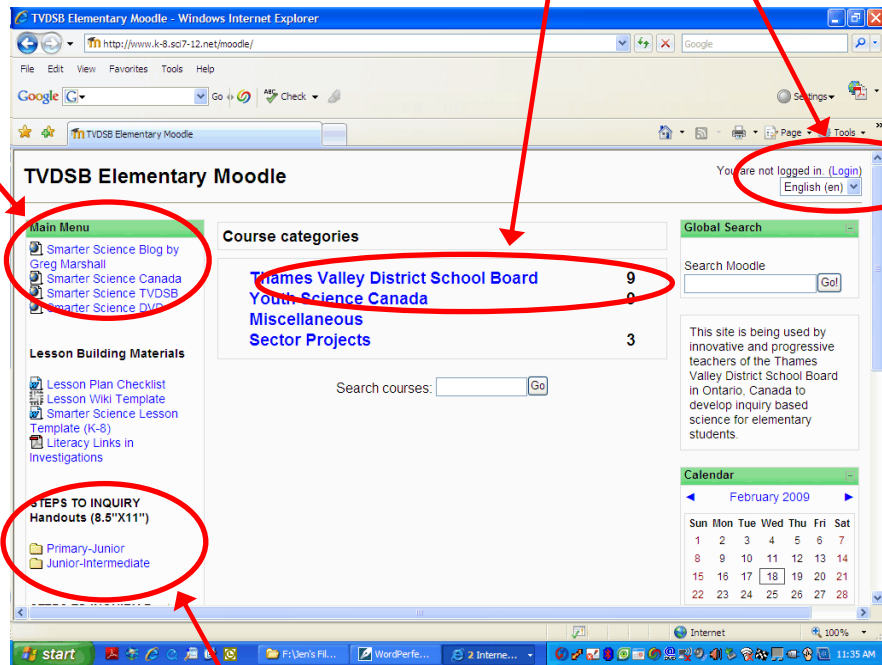
Presently, the Smarter Science resources and lessons can be accessed in a Course Management System (CMS) called moodle. At this time, the moodle is open to all educators across Ontario.

Click on the following link to access the moodle.

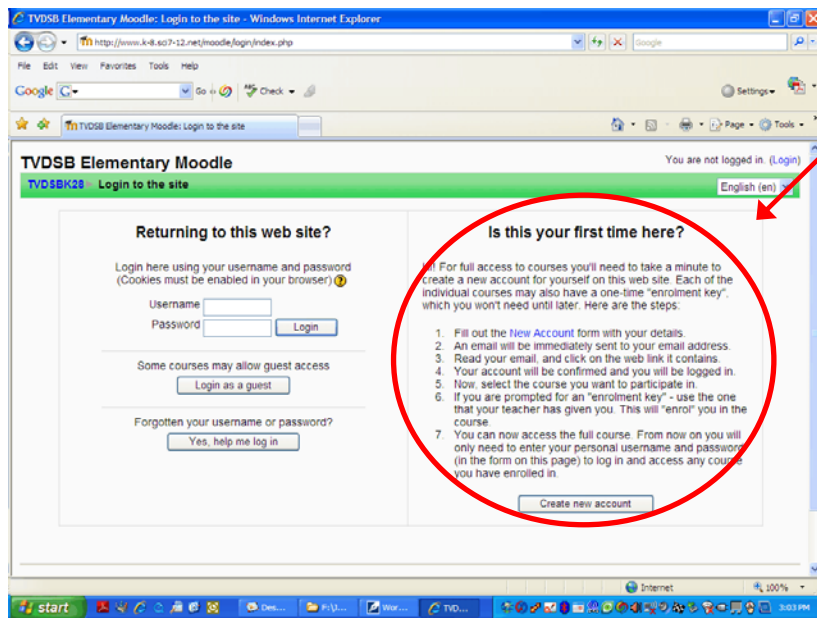
<http://www.k-8.sci7-12.net/moodle/>

To access lessons, you must first create a user login, and then enter into the link: Thames Valley District School Board.

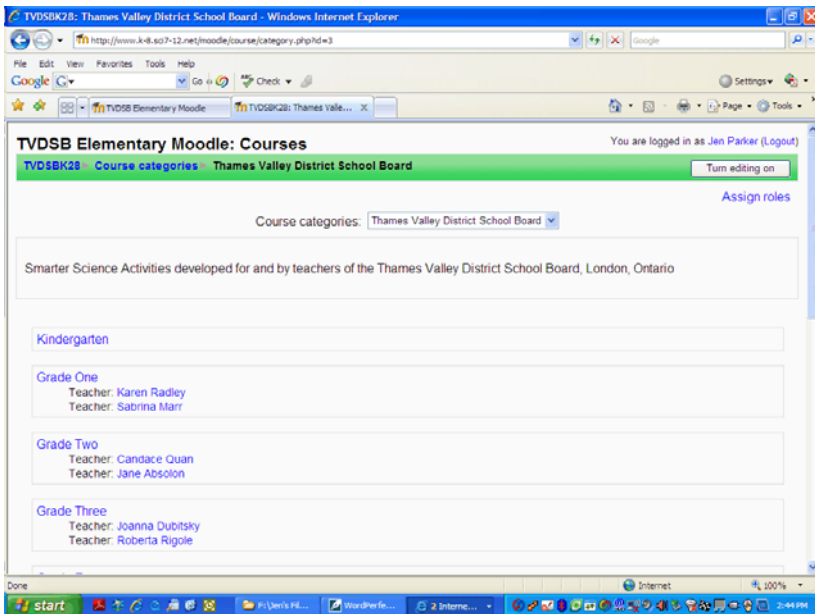
Many of the Smarter Science resources are located under the "Main Menu".



To assist students with their science fair projects, be sure to check out "*Steps to Inquiry*" - a series of posters used to develop and carry out a fair test. These posters structure the learning by allowing students to identify "changed", and "unchanged" variables, formulate testable questions, develop procedures, record and analyze results, and communicate conclusions.



Follow the directions listed to set up an account and login to the moodle.



After successfully creating a login, enter the moodle through the link "Thames Valley District School Board". Then select the grade you are interested in.