



# SECURE NETWORKING LESSON

Mark Emry – McNeil High School, Round Rock ISD, Austin, TX



This material is based upon work supported by  
the **National Science Foundation** under Grant No.1548315.

Additional materials may be found at [www.ncyte.net](http://www.ncyte.net)



# SECURE NETWORKING

## OSI MODEL LESSON PLAN

Students will participate in a hands-on activity then use computer-based tools to understand and experience the OSI (Open System Interconnection) Model.

### OBJECTIVES

The students will be able to:

- simulate (and interact with) the OSI Model in an unplugged way
- observe (and interpret) the OSI Model using their computer

### OUTLINE OF THE LESSON

---

#### STEP 1

Pass out boxes and items contained in file:

04.SecureNetworking\_OSIModel\_ActivityManipulatives.pdf

---

#### STEP 2

Introduce activity

---

#### STEP 3

Regroup using PowerPoint presentation and/or word file.

02.SecureNetworking\_Presentation.pptx

03.SecureNetworking\_OSIModel\_Activity.docx

---

#### STEP 4

Circulate and check-in frequently with students.

---

#### STEP 5

Encourage teamwork

---

#### STEP 6

The PowerPoint presentation should support the activity and help you and your students have visuals to work through.



## STUDENT ACTIVITIES

Students follow the steps you provided and that are in the worksheet to come up with a plan.

You touch base with students at strategic places (using the PowerPoint to facilitate). Suggested places are:

- After students complete Part I
- When students need to get an EVENT CARD
- When students need to organize their results (Part IV)
- When students need to calculate efficiencies. (Part VI)
- When connecting to the internet (Part VII)
- When understanding overlapping pieces (Part VIII) – be sure to mention Ports here
- When discussing Modes of Transportation (Part X) – UDP vs. TCP
- To guide students through Part X, where Order Matters.
- When explaining the OSI Model (Part XI)

## TEACHING/LEARNING STRATEGIES:

A PowerPoint was provided to have key visuals to help students understand key attributes

Encourage teamwork! Students should not feel alone. Check to be sure each student has support and facilitate group support for any student that seems hesitant.

At the start of class, avoid jargon. As you move through the course introduce jargon slowly and purposefully. Write these words (and possibly definitions) on the board.

Leading into this activity and following this activity there is a lot of work that you could do to introduce and/or reinforce.

