



Republic of the Philippines  
**Department of Education**  
National Capital Region  
Schools Division Office – Muntinlupa City

**SPECIAL PROGRAM IN TECHNICAL VOCATIONAL EDUCATION (SPTVE)  
COMPUTER SYSTEMS SERVICING 9 Q3-W3**

**I. Topic: Making Ethernet and Cable Testing**

**II. Objectives:**

1. identify wiring sequence for straight through and cross over cable;
2. determine the proper procedure in making Ethernet cable and;
3. explain the proper procedure in making Ethernet cable.

**III. Brief Introduction of the Lesson**

Before you get started, make sure you have the necessary tools, and decide whether you're going to use [Cat 5e or Cat 6 network cables](#).

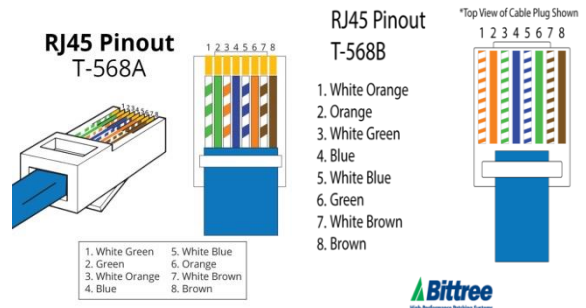
What you'll need:

- Unshielded twisted pair (UTP) patch cable
- Modular connector (8P8C plug, aka RJ45)
- Crimping tool
- Cable tester (optional, but recommended)



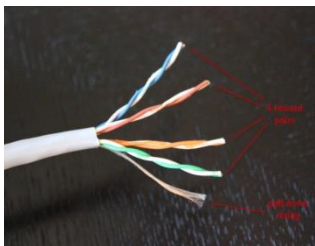
There are four pairs of wires in an Ethernet cable, and an Ethernet connector (8P8C) has eight pin slots. Each pin is identified by a number, starting from left to right, with the clip facing away from you.

The two standards for wiring Ethernet cables are T568A and T568B. T568B is the most common and is what we'll be using for our straight Ethernet cable. The tables below show the proper orientation the colored wires to the pins.



of

**Step 1:** Strip the cable jacket about 1.5 inch down from the end.



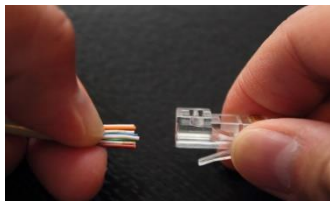
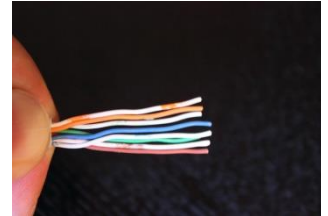
**Step 2:** Spread the four pairs of twisted wire apart. For Cat 5e, you can use the pull string to strip the jacket farther down if you need to, then cut the pull string. Cat 6 cables have a spine that will also need to be cut.





Republic of the Philippines  
**Department of Education**  
National Capital Region  
Schools Division Office – Muntinlupa City

**Step 3:** Untwist the wire pairs and neatly align them in the T568B orientation. Be sure not to untwist them any farther down the cable than where the jacket begins; we want to leave as much of the cable twisted as possible.



**Step 4:** Cut the wires as straight as possible, about 0.5 inch above the end of the jacket.

**Step 5:** Carefully insert into the modular

sure that each wire passes through the inside the connector.



the wires all the way connector, making appropriate guides

**Step 6:** Push the connector inside the crimping crimper all the way down.

tool and squeeze the



**Step 7:** Repeat steps 1-6 for the other end of the cable.

**Step 8:** To make sure you've successfully terminated each end of the cable, use a cable tester to test each pin.

When you're all done, the connectors should look like this:

That's it. For crossover cables, simply make one end of the cable a T568A and the other end a T568B. Now you can make Ethernet cables of any length or fix any broken connectors.

#### IV. Activities:

##### Activity 1

- A. Write the wiring sequence of T-568 for straight through cable / peer to hub network connections

T-568 ____	T-568 ____



Republic of the Philippines  
**Department of Education**  
National Capital Region  
Schools Division Office – Muntinlupa City

B. Write the wiring sequence of T-568 for cross over cable / peer – to – peer network connections.

T-568 ____	T-568 ____

**Activity 2**

To determine the correct the patch cable, write the correct pin out/number sequence of each end in every column.

STRAIGHT THROUGH	
T568B	T568B
1	1

CROSS OVER	
T568A	T568B
1	3

**Activity 3**

Each type of Ethernet cable has different connections or usage, give at least 3 devices connected for straight through and 3 devices for cross over cable.

STRAIGHT THROUGH	
1.	↔
2.	↔
3.	↔

CROSS OVER	
1.	↔
2.	↔
3.	↔





**Republic of the Philippines**  
**Department of Education**  
National Capital Region  
Schools Division Office – Muntinlupa City

---

**V. Assessment:**

Directions: Encircle only the letter of the correct answer.

1. What type of connector used in unshielded twisted-pair cable?  
A. RJ-11                      B. RJ-30                      C. RJ-45                      D. RJ-50
2. Which standard body created the cables and connector specification used to support Ethernet implementation?  
A. ISO                      B. NSI                      C. EIA/TIA                      D. IETF
3. A cable that consists of color-coded pairs of insulated copper wires that are twisted around each other to form pairs that are encased in a plastic sheath.  
A. coaxial cable                      C. fiber optic cable  
B. twisted pair cable                      D. signal cable
3. When both ends of a patch cable are terminated identically it is called  
A. straight through cable                      C. crossover cable  
B. mirror cable                      D. rollover cable
4. STP and UTP cables use these type of connectors  
A. RJ-45                      B. RJ-11                      C. RJ-48C                      D. RS-232
5. Which connector type is used for a modem connection?  
A. RJ-45                      B. RJ-11                      C. BNC                      D. SC

**VI. Reflection:**

What is the difference between straight-through cable and cross over cable?

References: (Font size 6)

1. <https://www.cnet.com/how-to/how-to-make-your-own-ethernet-cable/>  
Date retrieved: January 6, 2021
2. <https://quizizz.com/admin/quiz/5e1414683329840020f069de/ethernet-cable>  
Date retrieved: January 6, 2021

Writer: Eddie I. Villamor

Validator: Gregorio S. Quineri

