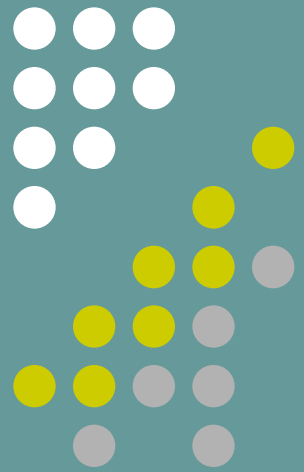
Grade 9 UTM Grid Tutorial

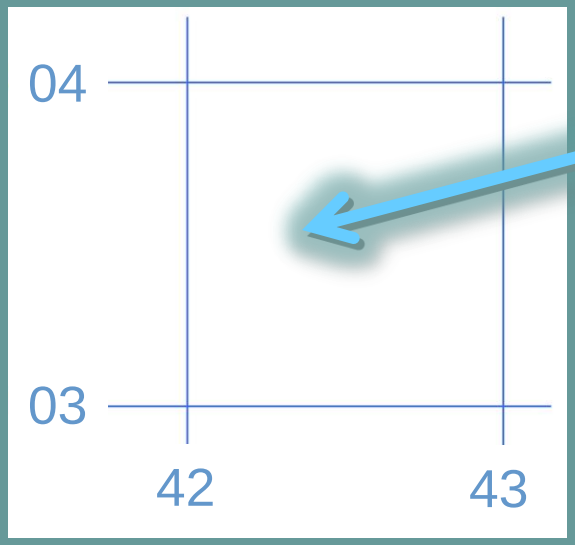


Topographic Maps

Determining Location-UTM Grid

Look closely at the map and you will notice a series of blue **GRID LINES** forming squares.

Without the map in the way, they look like this.



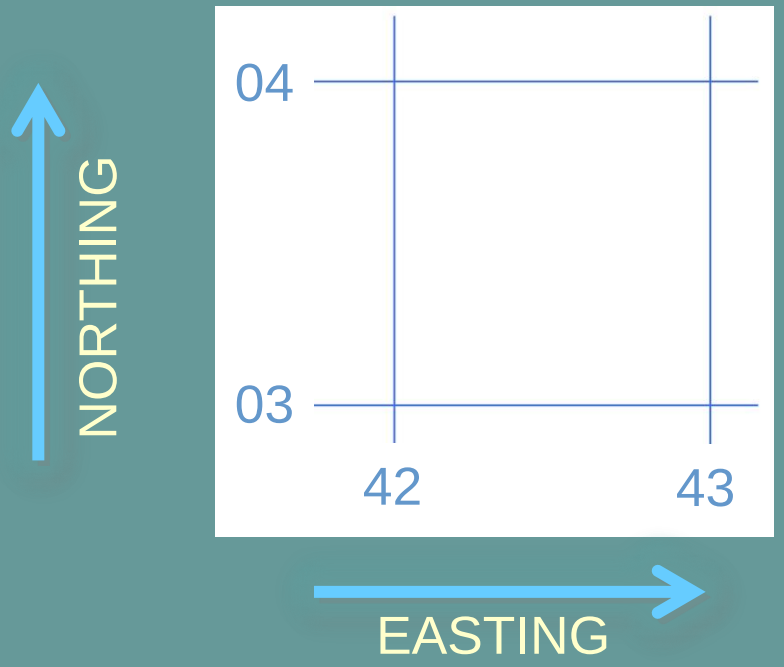
The squares are 1000m on each side…which could be why its known as a “thousand meter grid”!

Topographic Maps

Determining Location-UTM Grid

The numbers along the bottom tell you how far EAST you are of the map's **FALSE ORIGIN** (remember that ?) The number is called an **EASTING**.

The numbers along the side tell you how far NORTH you are of the map's **FALSE ORIGIN**. The number is called a **NORTHING**.



You **ALWAYS** find the **EASTING** and then the **NORTHING**. Think of going into a house…in the door, up the stairs,,,you can't go up the stairs first!

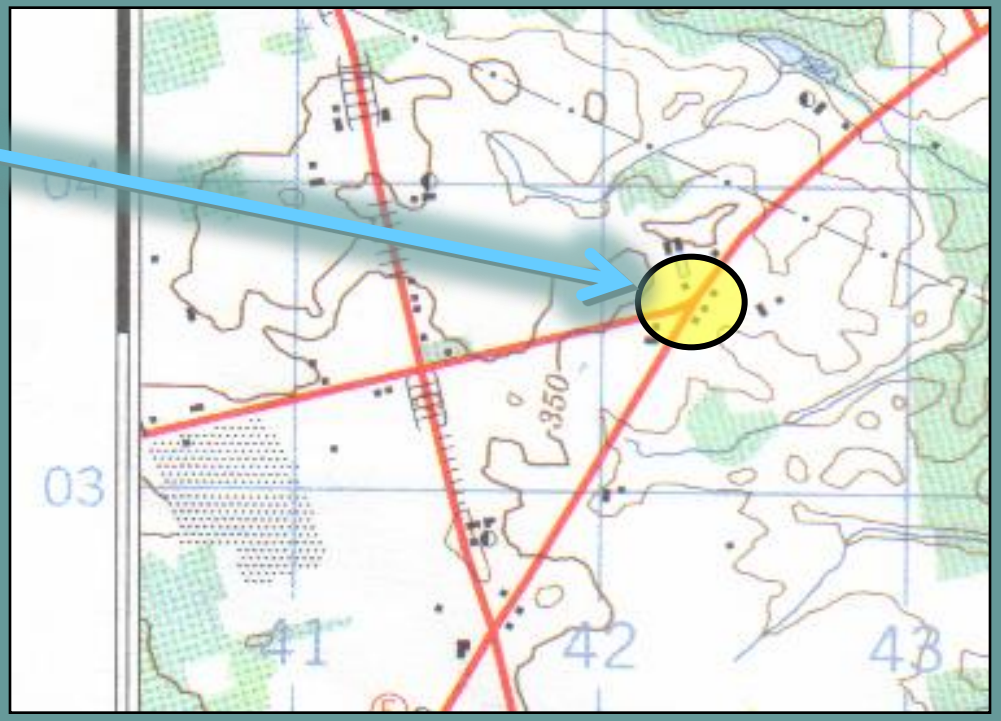
Topographic Maps

Determining Location-UTM Grid

Using the four numbers provided by the **EASTING** and **NORTHING** you can find a general location (**GRID REFERENCE**)

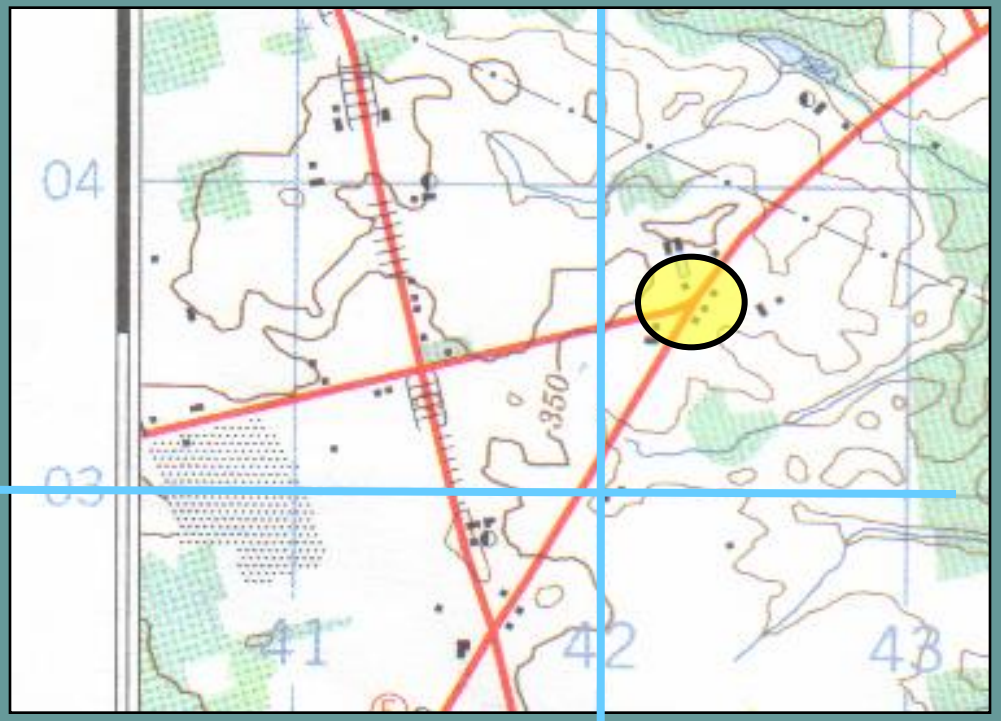
Remember, the square will be 1 km x 1 km!

A **GRID REFERENCE** always refers to the lower left corner of the box.



Topographic Maps

Determining Location-UTM Grid



03

Then find the NORTHING…

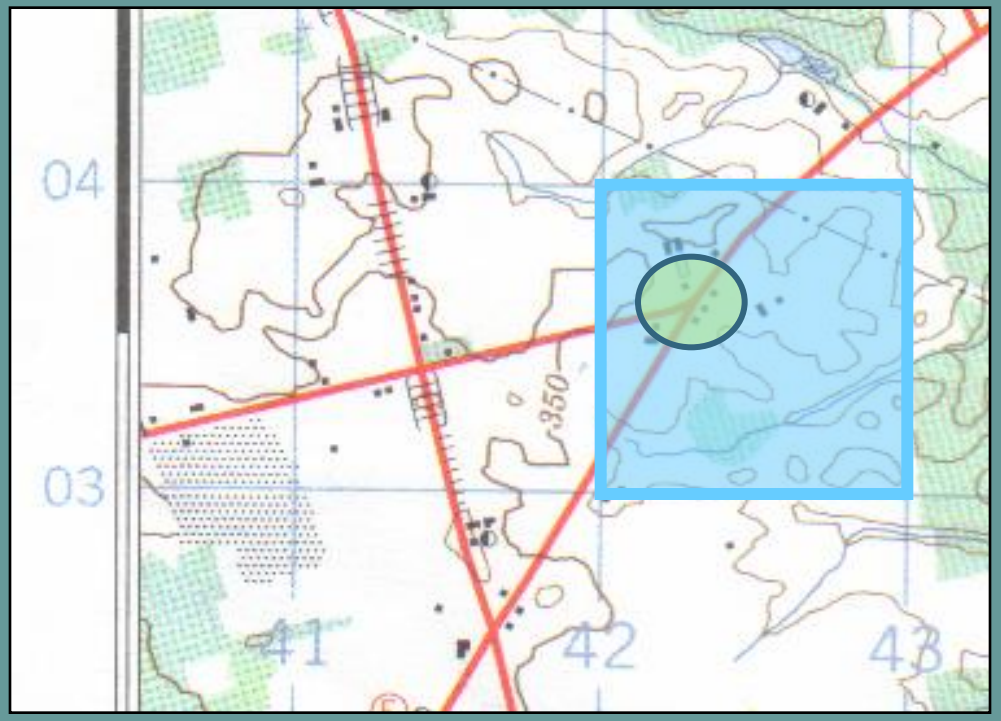
First find the EASTING…

42

Topographic Maps

Determining Location-UTM Grid

4203 describes the location of the lower left hand corner of the grid square containing the “Y” intersection.



(Remember…in the door, up the stairs.)

Topographic Maps

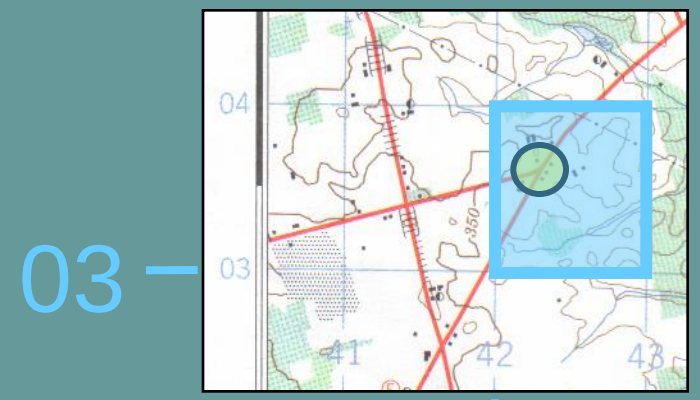
Determining Location-UTM Grid

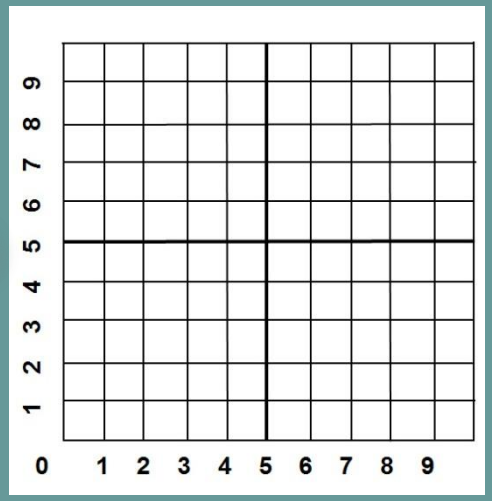
A four figure **GRID REFERENCE** locates objects inside a 1km x 1km box. Normally more precision is needed.

To do this you can subdivide the box into smaller units.

You can “eyeball it” or use a device called a **ROMER**.

A **ROMER** is a transparent grid that fits over the grid on the map and breaks the “big square” into 100 smaller squares.



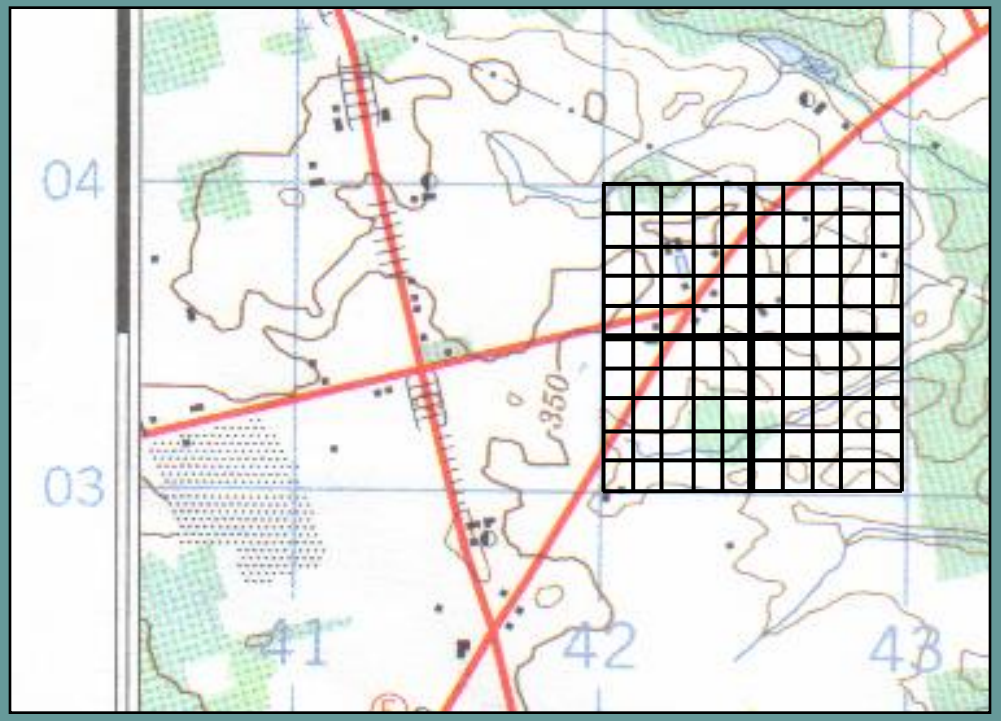


Topographic Maps

Determining Location-UTM Grid

A six figure **GRID REFERENCE** puts you inside a 100 m x 100 m box, which is generally good enough for land navigation.

To determine a six figure **GRID REFERENCE** lay the **ROMER** over the square you are interested in.



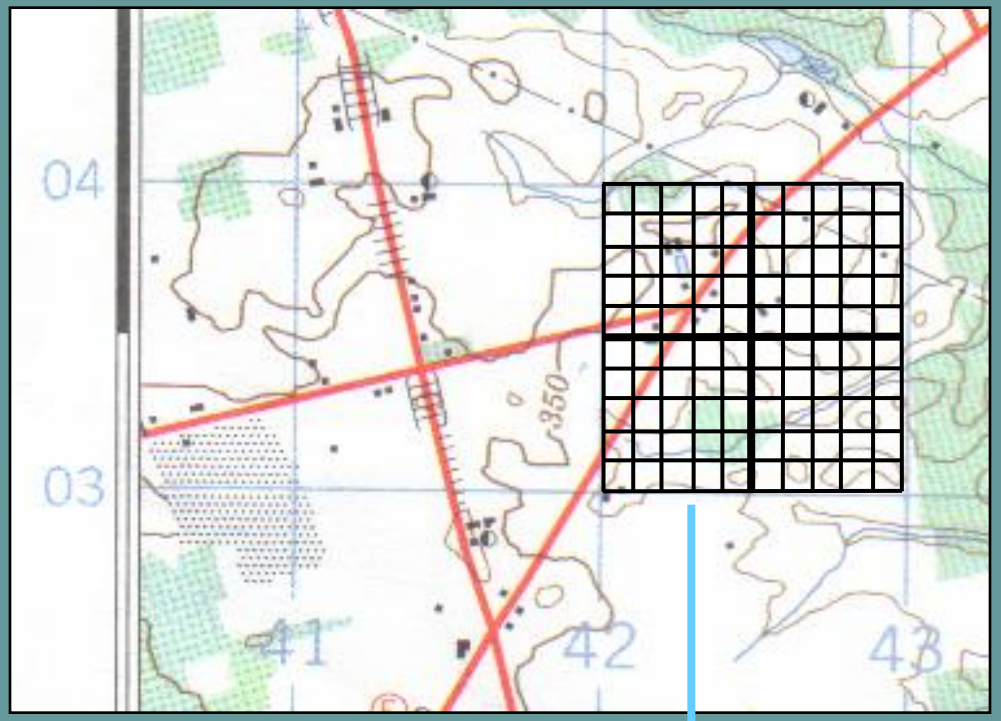
Topographic Maps

Determining Location-UTM Grid

Use the same **EASTING** that you did for the four figure **GRID REFERENCE.**

Add a third digit to describe how many 100m squares you are from the **EASTING** (in this case 3)**.**

The **42** of the four figure **GRID REFERENCE** becomes **423** in the six figure **GRID REFERENCE**



Topographic Maps

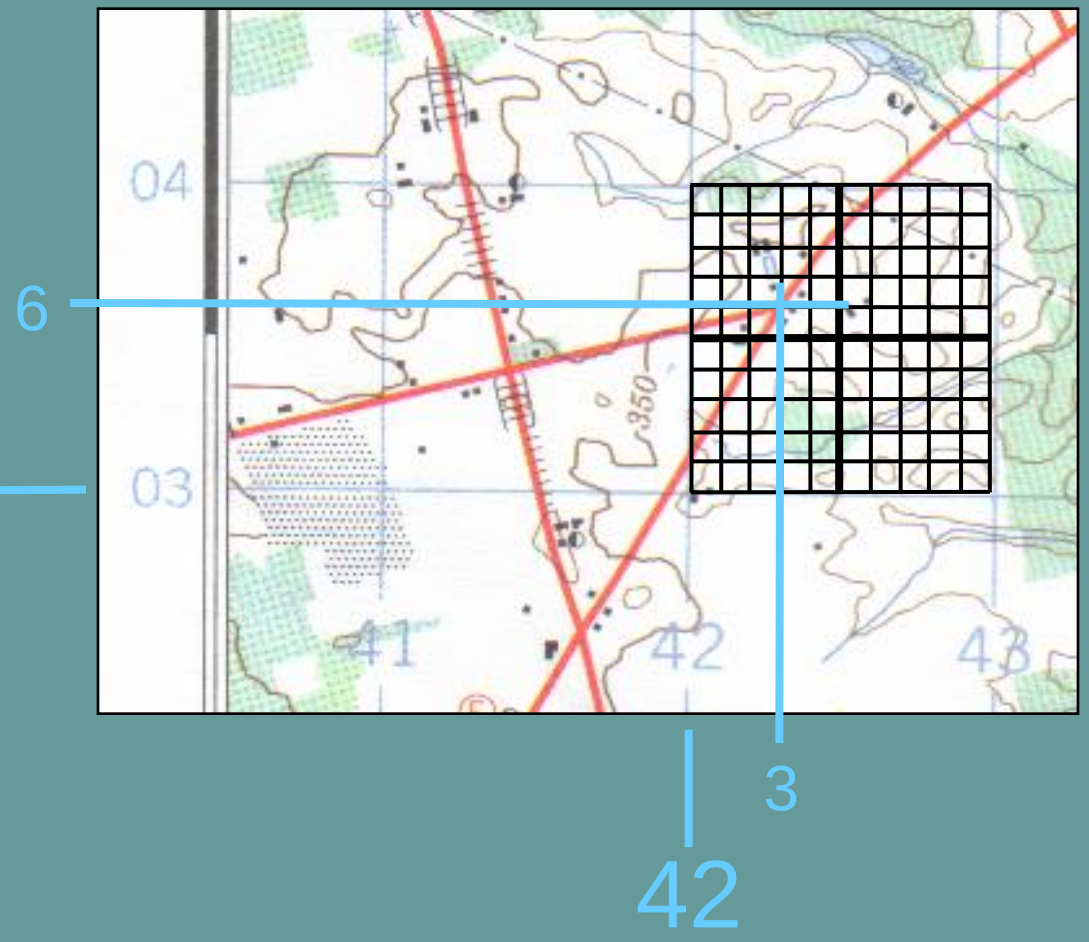
Determining Location-UTM Grid

Repeat the process for the **NORTHING**.

Putting the two together you get:

423036

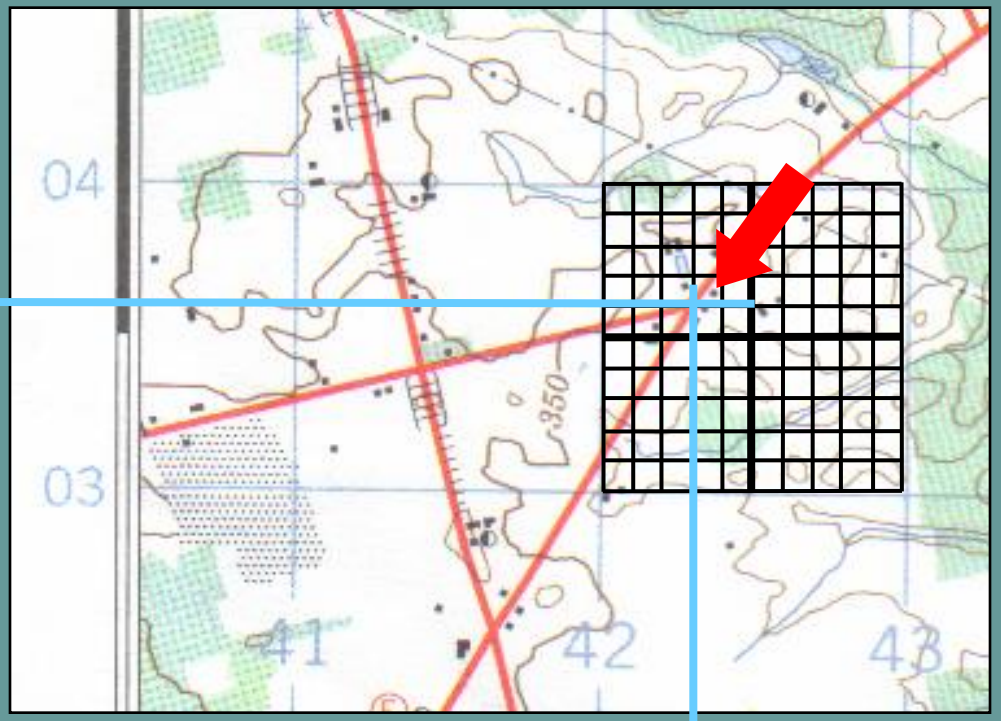
Notice that there are no spaces, nor punctuation or symbols of any kind. **Simply six digits!**



Topographic Maps

Determining Location-UTM Grid

To make navigation even more accurate, subdivide each square on the **ROMER** into 10 smaller units…you will get an **8 DIGIT GRID REFERENCE**.



For example, the building just North of the “Y” intersection is located at:

42380365

Topographic Maps

Determining Location-UTM Grid

4	Figure **GRID REFERENCE** = 1000m box	good for general location
6	Figure **GRID REFERENCE** = 100m box	good for specific area
8	Figure **GRID REFERENCE** = 10m box	good for specific object
12	Figure **GRID REFERENCE** = 1m box	provided by GPS