

General tips and suggestions to help your practical go smoother

- Always **look at your layers** before beginning your analysis – both the **features** (spatial layout) and their **attributes** (fields and records). Check that all layers are in the same projection and have their projection defined
- **Think about what you are being asked** and how to answer the question with the layers provided
 - Create flowchart / layer list with processing steps

- **Turn off** all layers except the one(s) you are working with for an analysis step
 - reduce “visual clutter”
 - improves your chances of noticing something wrong in your output
 - Makes it easier to see the pattern of features in a layer
- Always **visually assess** the result of **selections** and **definition queries** by looking at the attribute table of the layer you’re working with and by using the **selected/all** records buttons.
 - Use the **verify** button **before** performing queries
 - **sort ascending** or **descending** on the field and Hide/Show records you were querying to help verify the selection
 - look at the distribution (pattern) of selected features in the map

- Have a good **understanding of the basic GIS operations** (buffer, clip, erase, dissolve, and union/intersect)
 - the **Help>> button** in a tool will often show you an **example graphic** of what the tool does to data
- Always **visually assess** the results of **overlays** (clip, erase, union or intersect) or **buffers** after the process completes
 - Overlays: compare the areas in the output layer to the inputs
 - Buffers: make sure all (or selected) features were buffered.

- **Be aware of selections** in the layers you are geoprocessing
 - Overlays and buffers (to name a few functions) **only work on selected records in the attribute table**
 - if you have three features selected in a layer and create a buffer, you will get only three buffer polygons in your output layer
- If you need all the features in a layer for an operation, remember to **Clear Selected Features** before proceeding
- If you only need a **subset**, be sure to **select** first (either by attributes or location) and **verify** the results before continuing
- Often it makes sense to create a **new layer** from a selection (right-click on layer>Data>Export), especially if you will be using a subset of features in later analyses

- Be sure you are **using the correct layer** during analysis.
 - If you create an intermediate layer, or a series of them, it is usually the intermediate layer that is an input to the next step, *not* the original layer
- **Name your layers** so you can remember what they are!
 - You will forget what the layers are if you use default names.
 - Can also write layer names on your flowchart

- **“Assess the resources within X distance”** requires a **buffer / clip / update** to determine the correct answer.
 - Using **Select By location** to find features **within a distance of** or **completely within a distance** will almost always select too many or too few features and give you an artificially large or small answer.
- **“Must be at least x distance away” or “cannot be located within (cover type, soil type, or x distance)”** means these areas must be **eliminated from consideration**, either via a **definition query** or **erase**

- Know how to **update feature geometry**, esp. when working with shapefiles.
 - Area, perimeter, length, acres, hectares
 - Cannot add fields if layer is in edit mode
 - Acres or hectares field should be float type
- Use the **statistics** function on numeric fields to determine quick totals for selected/all features
- Create **summary tables** to tally up cover types and generate feature counts and area totals and statistics

- Multiple query statements must stand alone
 - Veg_type = 'cedar' OR veg_type = 'white pine'
 - **INCORRECT:** Veg_type = 'cedar' OR 'white pine'
- Use **LIKE** to match similar partial strings in a query
 - Veg_type LIKE 'Wet%'
 - Will match 'Wetland' 'Wetland – bog' and 'Wetland - forested'
- Use the **mouse to build queries** when possible
 - Will keep spaces and quotes correct

- Use **calculate geometry** to update areas, perimeters, lengths, acres
 - **Area** is in map units (sq. meters for MI Georef & UTM)
 - **Length** is in map units (meters)
- If a number looks suspiciously low or high, recalculate geometry (length, area)

- As you start each new analysis task, start with a fresh map document **OR** remove any definition queries and clear all selections before proceeding

- **Relax**
- **Think** about what you're trying to eliminate or preserve from the layers.
- **Verify** your results at each step. Do your results make sense? If not, try the operation again (verifying each step) to see if you get the same results.
- If all else fails, quit and re-launch ArcMap