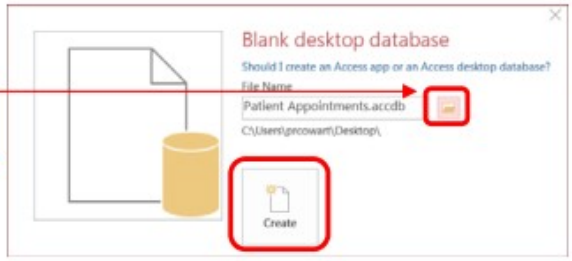
Class Exercise :

Create the Database

1. Open Microsoft Access
2. Choose **Blank Desktop Database**
3. Click on the yellow folder at the end of the **File Name** box and browse for the desktop
4. Use the file name: Patient Appointments
5. Click **Create**

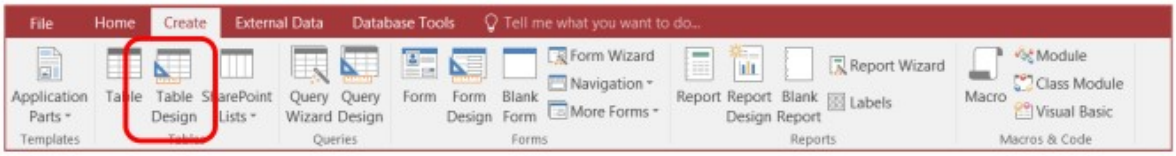


Explore the Window

1. Close **Table1** with the X under the ribbon, or by right-clicking on the name of the table
2. **Explore the Ribbon**
   a. **Home** tab – Clipboard, Sort & Filter, Spell Check, Refresh Data, Format text
   b. **Create** – Create a database object: Tables, Queries, Forms, Reports
   c. **External Data** – Import and Export data
   d. **Database Tools** – Advanced Features of Relationships and Data Analyzers

Create the Patients Table

1. Click on the **Create** tab and choose **Table Design**



2. Type the first Field Name: **Pt Med Rec #**
   a. Data Type: Short Text, Description: Patient's Medical Record Number
3. Enter in the rest of the fields (descriptions not necessary):

Patients

Field Name	Data Type	Description (Optional)
Pt Med Rec #	Short Text	Patient's Medical Record Number
Pt First Name	Short Text	
Pt Last Name	Short Text	
Pt Phone #	Short Text	
Pt Birth Date	Date/Time	

4. Set the Pt Med Rec # to be the key
   a. Click on the big yellow key on the toolbar
5. Save the Table as **Patients**

Entering First Record

1. Turn to the Datasheet View
2. Enter our first Med Rec #: **123-456**
3. Press tab move to the next field

Pt Med Rec #	Pt First	Pt Last	Pt Phone #	Pt Birth Date
123-456	Sam	Franks	3525551234	1/1/1

   a. First Name: **Sam**
   b. Last Name: **Franks**
   c. Phone #: **3525551234**
      - No dashes
   d. Birth Date: **1/1/1**
      - If you set it as a DATE/TIME field Access will add in the "200" for 2001

Exit the Database

1. Exit the database, Access will probably not ask you to save
   a. But it did save the record, it does so automatically.
2. Open your database from the desktop
   a. If necessary, Enable Content
3. Open the table (double-click) from the navigation pane
   a. Sam is still there!

Rearrange Fields

1. In Design View, move Pt Birth Date above the Pt Phone #
   a. Click on the row heading, the grey box in front of the field name. Then Click/Drag the line above the Pt Phone #
2. Switch to the Datasheet View and Save the table
   a. Data saves itself, structural changes have to be saved manually
3. Enter the next record

Pt Med Rec #	Pt First	Pt Last	Pt Birth Date	Pt Phone #
789-012	Jacob	Smith	2/2/92	3525554321

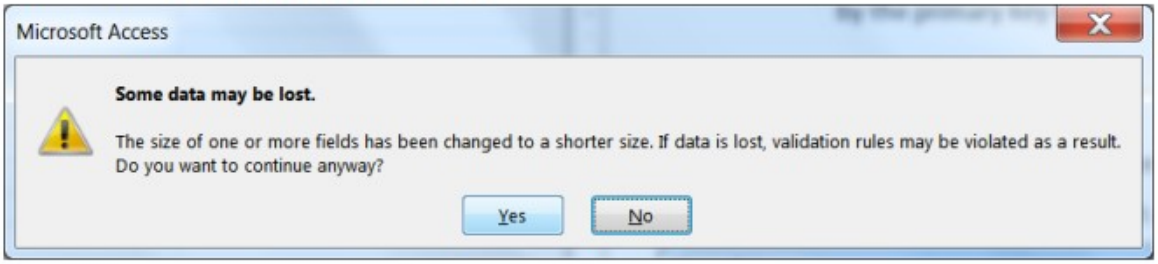
   a. No hyphens in the phone number

Adding Fields

1. In Design View, create **Pt Gender**, Short Text field, above Pt Birth Date
   a. Insert Rows from Design Tab, or from the right-click menu
2. In Data View, enter "Male" (the whole word) for Sam and Jacob

Modify Field Properties – Field Size

1. In Design View, set ***Field Size*** property of Gender at the bottom of the window to be 1
    a. When you save you will get the following warning message saying data may be lost. We want this to happen, click Yes.



    b. Data is lost, our Male entries should now only read M

Modify Field Properties – Format

1. In Design View, set the ***Format*** property for Pt Birth Date to be a Medium Date
    a. Notice there is no "field size" for a date field, because it doesn't matter how many characters you type in, as long as it's a valid date.
    b. Access recognizes dashes (1-1-2001) and slashes (1/1/2001) for date formats

Enter a "trouble maker" Record

1. Enter the next record

Pt Med Rec #	Pt First	Pt Last	Pt Gender	Pt Birth Date	Pt Phone #
555-555	Jane	Williams	F	March 3, 1983	352-555-5555

    a. Enter Gender as just one character
    b. Enter birth date as March 3, 1983; it should change to 3/3/1983
    c. Type in the hyphens for the phone number
2. Go to the Design view and then return to the Data view
    a. Notice Jane's record moves. This is because by default Access sorts by the primary key field. Since Pt Med Rec # is our key, every time the data is refreshed it will sort the data by the primary key field.

Patients

Pt Med Rec #	Pt First Name	Pt Last Name	Pt Gender	Pt Birth Date	Pt Phone #	Click to Add
123-456	Sam	Franks	Male	1/1/2001	3525551234	
555-555	Jane	Williams	F	3/3/1983	352-555-5555	
789-012	Jacob	Smith	Male	2/2/1992	3525554321	
*						

Modify Field Properties – Input Mask

1. In Deign View, set an ***Input Mask*** for the Phone Number
   a. Click in the Input Mash Property for Pt Phone #
   b. Click the Build button (…) at the end of the line to launch the wizard
   c. In the Input Mask Wizard, Phone Number is already selected. Click FINISH.
   d. Save and View Results

Patients

Pt Med Rec #	Pt First Name	Pt Last Name	Pt Gender	Pt Birth Date	Pt Phone #	Click to Add
123-456	Sam	Franks	M	01-Jan-01	(352) 555-1234	
555-555	Jane	Williams	F	03-Mar-83	352-555-5555	
789-012	Jacob	Smith	M	02-Feb-92	(352) 555-4321	

2. Fix Jane's Phone Number by taking out the extra dashes

Enter a New Record

1. Enter a new record

Pt Med Rec #	Pt First	Pt Last	Pt Gender	Pt Birth Date	Pt Phone #
527-594	Doris	Jones	F	4/4/74	3525555432

2. Close the Table
3. Open the Patient's Table

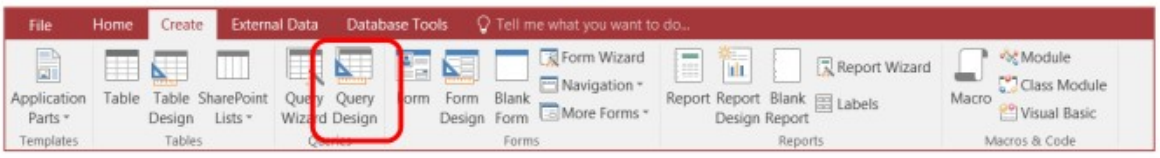
Patients

Pt Med Rec #	Pt First Name	Pt Last Name	Pt Gender	Pt Birth Date	Pt Phone #	Click to Add
123-456	Sam	Franks	M	01-Jan-01	(352) 555-1234	
527-594	Doris	Jones	F	04-Apr-74	(352) 555-5432	
555-555	Jane	Williams	F	03-Mar-83	(352) 555-5555	
789-012	Jacob	Smith	M	02-Feb-92	(352) 555-4321	

4. Close the Table

Create Female Patient's Query

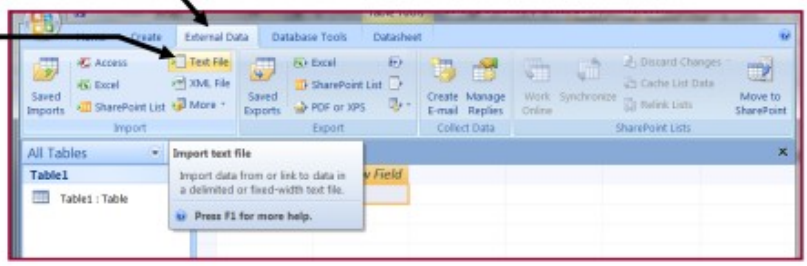
1. Go to the Create Tab and choose Query Design



Importing the N10EKS - How to do it:

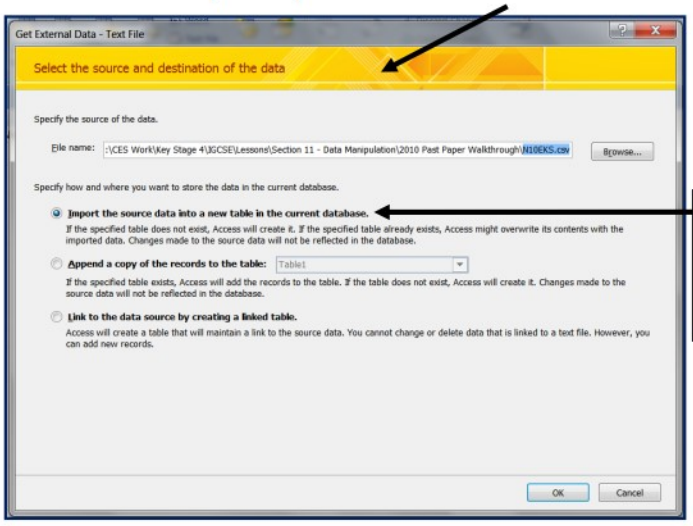
1. Copy the **2010 Past Paper Walkthrough folder** into your Data Manipulation folder.

2. Select the **External Data** tab then click on the **Import Text File** icon.



IMPORTANT NOTE: **Files saved in .csv format are considered text files. Each data item is separated from the next by a comma.**

3. This icon opens up the **Get External Data** window like this:



Use the Browse... button to find the file **'N10EKS.CSV'**.

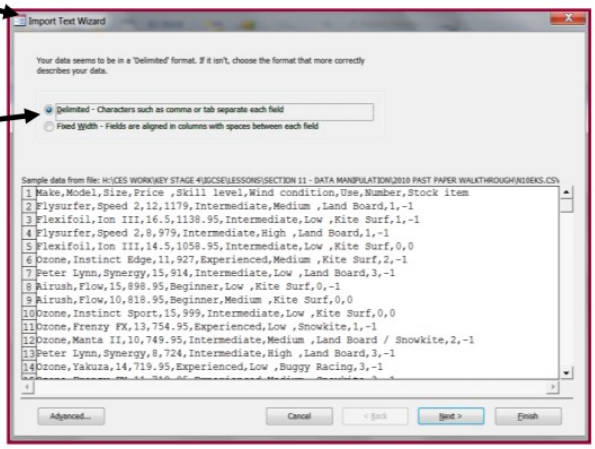
NOTE: Ensure the top option button is selected. This ensures the data is saved in a new table.

Click on OK.

4. The **Import Text Wizard** window will open.

5. Select the **'Delimited'** option. This option is for **data that is separated by a comma** (as is the case in .csv files)

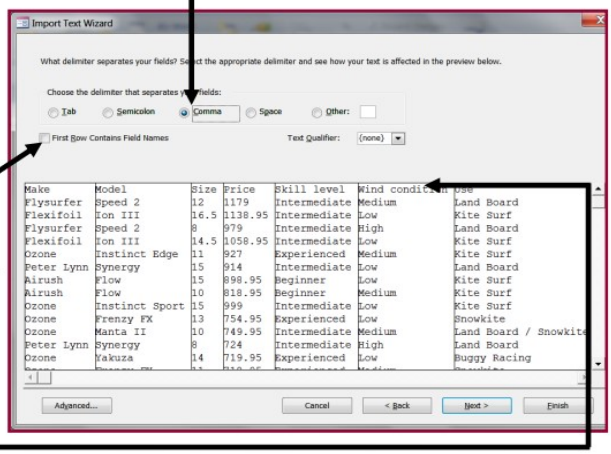
   Click on Next > .

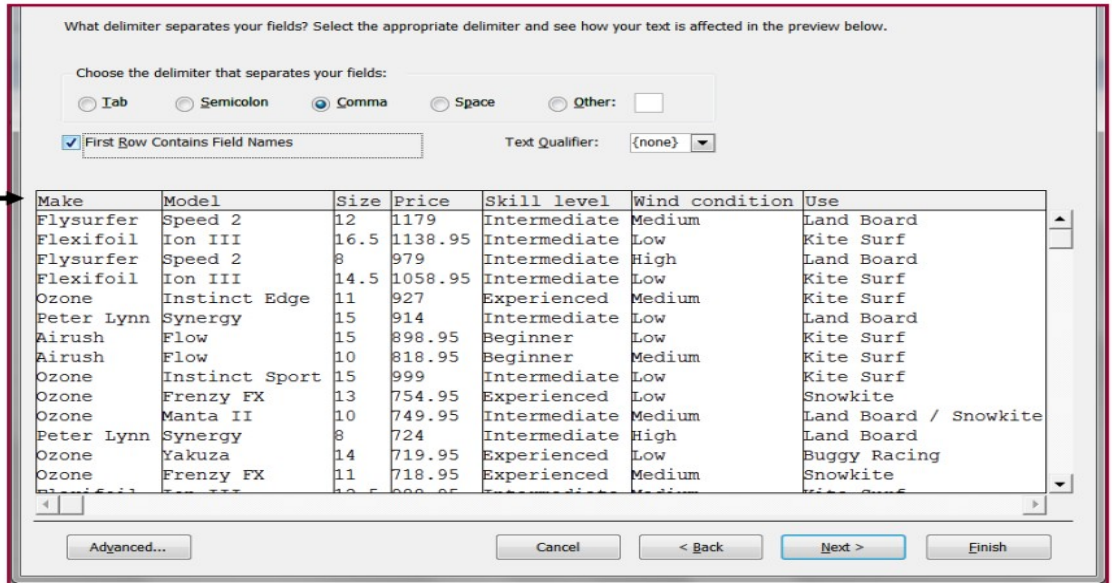


6. For the next part of the wizard make sure that the **Comma** option is selected using the option buttons.

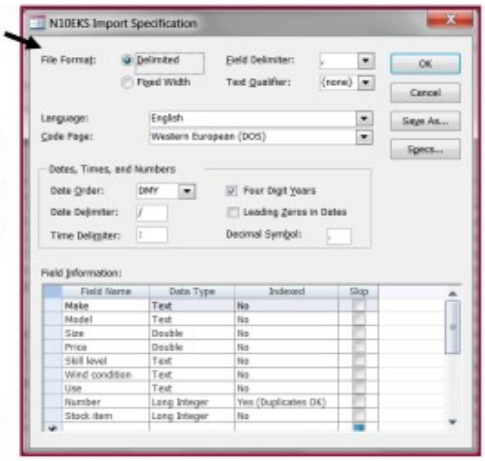
Examine the first row of the data and decide if it contains the fieldnames that you need or if it contains the first row of data.

7. If the first row contains the fieldnames, click on the **First Row Contains Field Names** tick box. As you tick the box the first row changes from **this** to **this**.





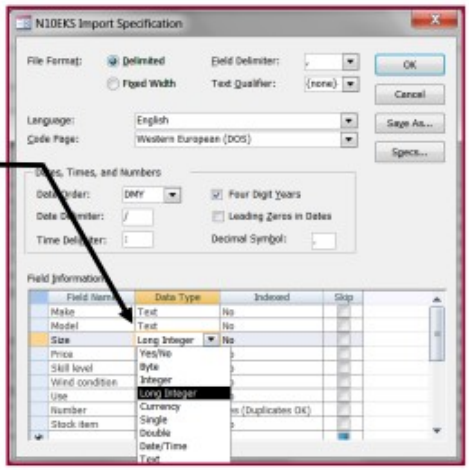
8. Click on Advanced... to open the **Import Specification** window.



Check that all **fieldnames** and **data types** match those specified in task 35. In this case the Size, Price and Stock Item fields are not correct. Make the following changes:

- Size field needs changing to **Long Integer**
- Price field needs changing to **Currency**
- Stock Item needs changing to **Boolean (Yes/No)**

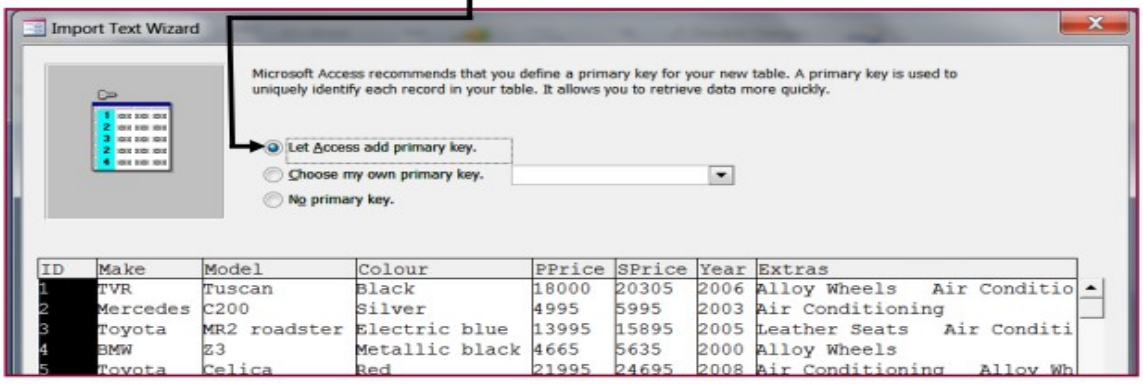
9. To make these changes, click on the **Data Type** cell for each of the fields and use the **drop-down list** to select the correct options as described in the list above.



When all of the changes have been made, click on OK.

10. Select Next > twice.

11. On the screen where Access is asking you about a **Primary Key** you should ensure that you select the option **'Let Access add primary key'**.

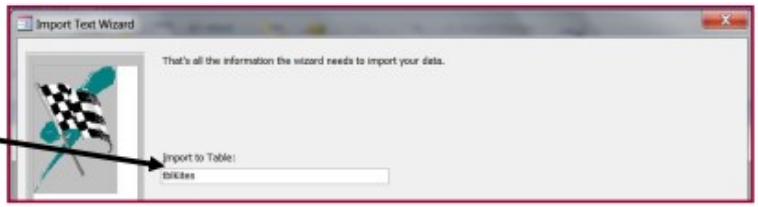


This adds a new field called **ID** to the table.

NOTE: Primary Keys ensure that each record can be uniquely identified.

12. Click on Next > .

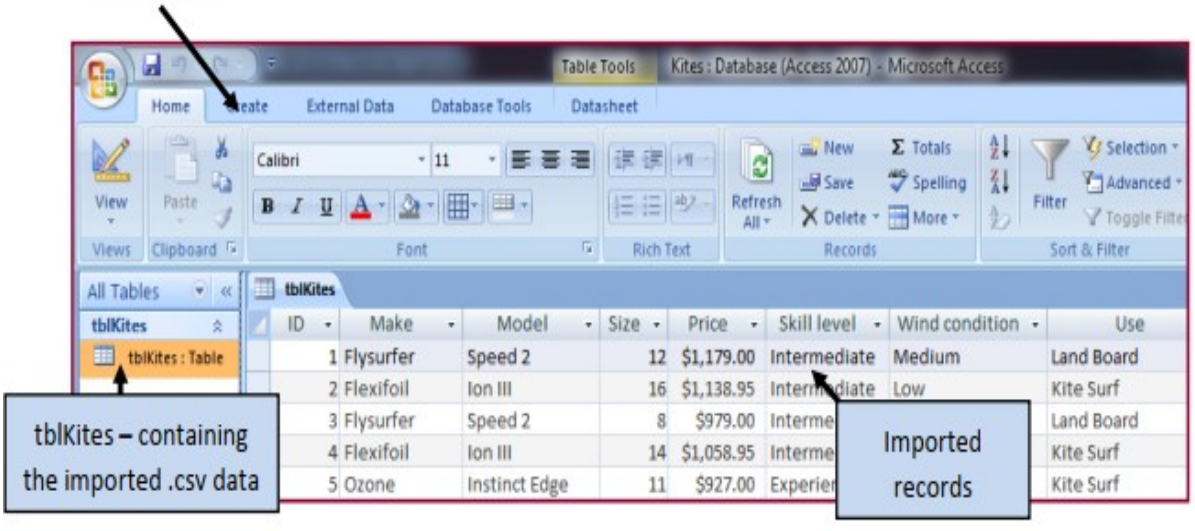
13. In the **Import to Table:** box enter **'tblKites'**.



NOTE: This is a meaningful table name. The 'tbl' shows you that it is a table and the 'Kites' gives an idea of what kind of data is being held.

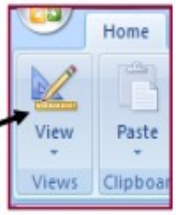
14. Click on Finish to import the data and then Close to close the wizard.

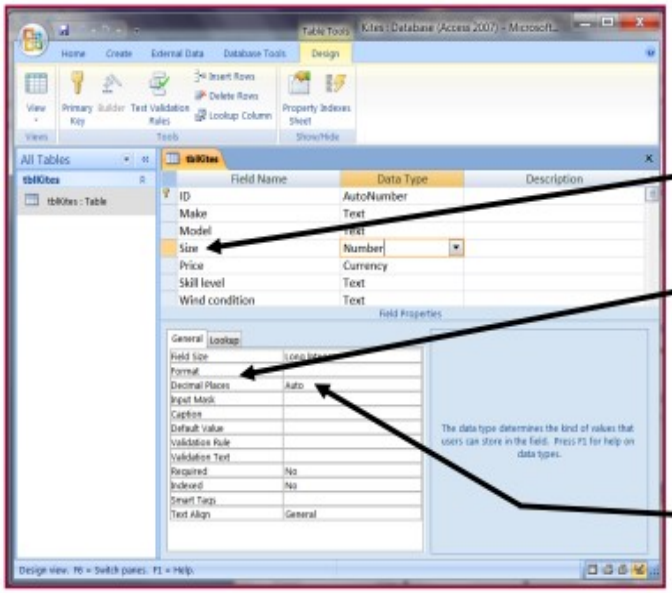
15. Double click on **tblKites** to display the imported information which should look like this:



Amending Field Properties – how to do it:

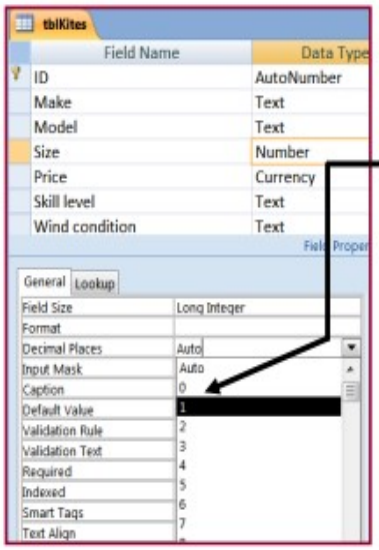
1. Changes to the field types, or other properties, can be made from the **Home** tab. In the **Views section**, click on the **Design View** icon.





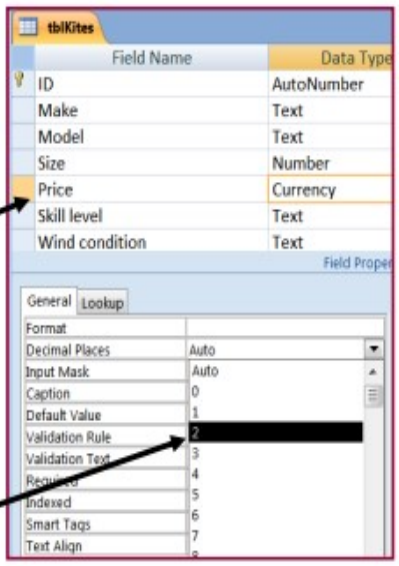
2. The task instructed you to set the **Size field** to **1 decimal place**. You can check this by clicking the left mouse button in the **Size** field and viewing the number of **Decimal Places** in the **General tab** at the bottom of the window.

As you can see this is not set to **1 decimal place** but set to **'Auto'**.



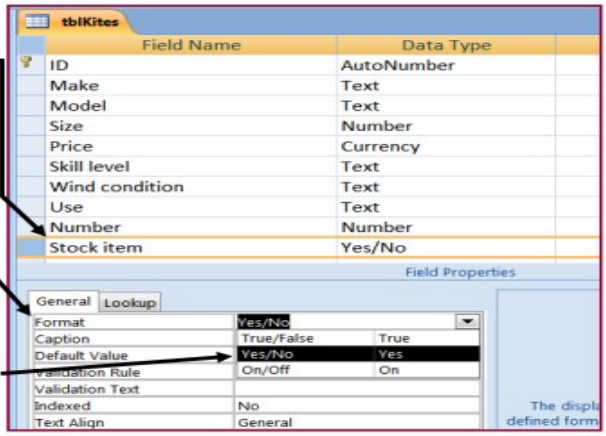
3. Click on the cell containing **'Auto'** and use the drop-down list to set this to **1 decimal place**.

Use the same method to set the **Price field** (which is currency data type) to **2 decimal places**.



4. To change the Boolean field so that it displays **'Yes' or 'No'**, click in the **Stock Item** field and in the **General** tab select the **Format** cell.

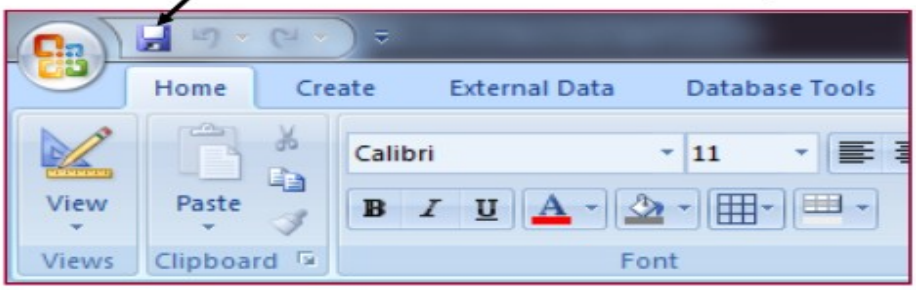
5. Use the drop-down list to select the **Yes/No option**.



6. Save the database for later use by clicking the symbol.

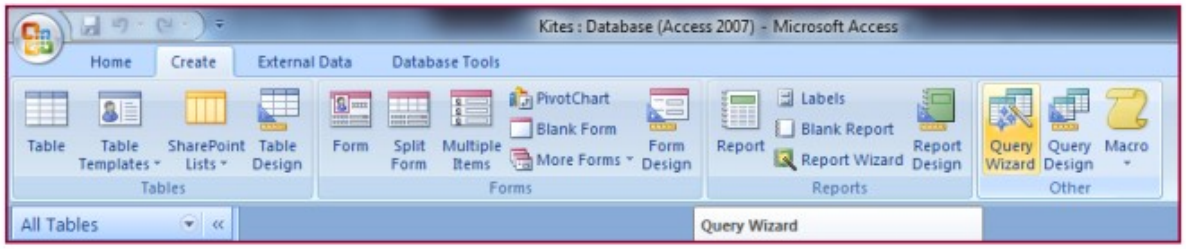
Save the data – How to do it:

To save the new records in the table simply press the **Save button** which you can find to the right of the Office Button (top left of the screen).

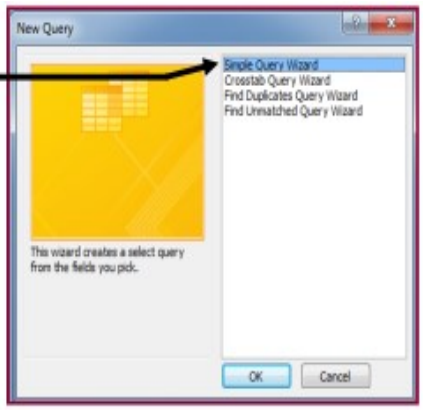


Creating the query – How to do it:

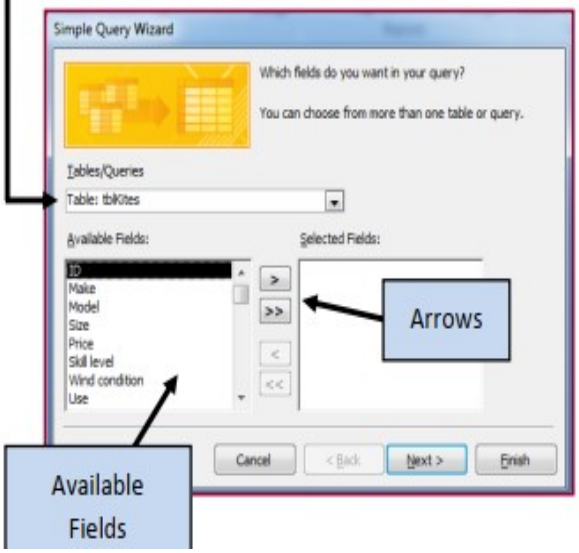
1. Click **Create** and then **Query Wizard**.

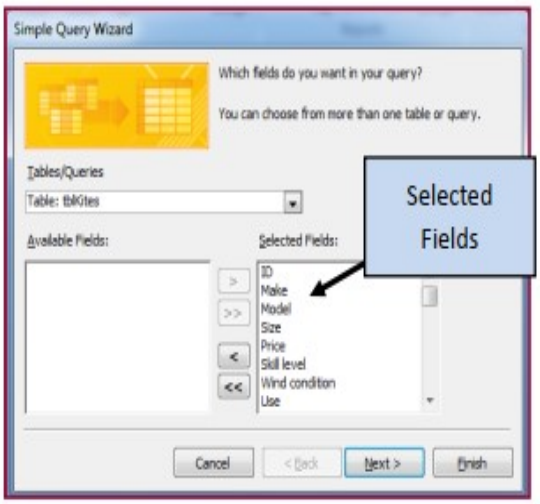


2. Select **Simple Query Wizard** then click **OK**.

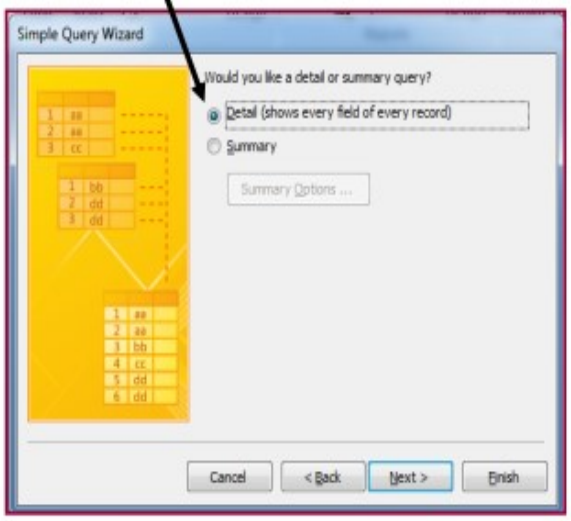


3. On the next screen, you should make sure that **tblKites** option is selected. Use the **arrows** to move the fields from the **Available Fields:** window into the **Selected Fields:** window.





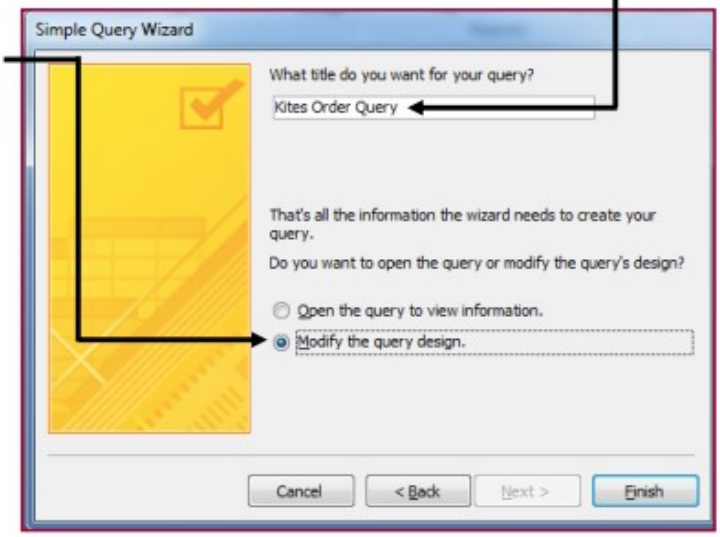
4. Select the **'Detail – show every field of every record'** option then press **Next**. (If the task required a summary of data then you would choose 'Summary')



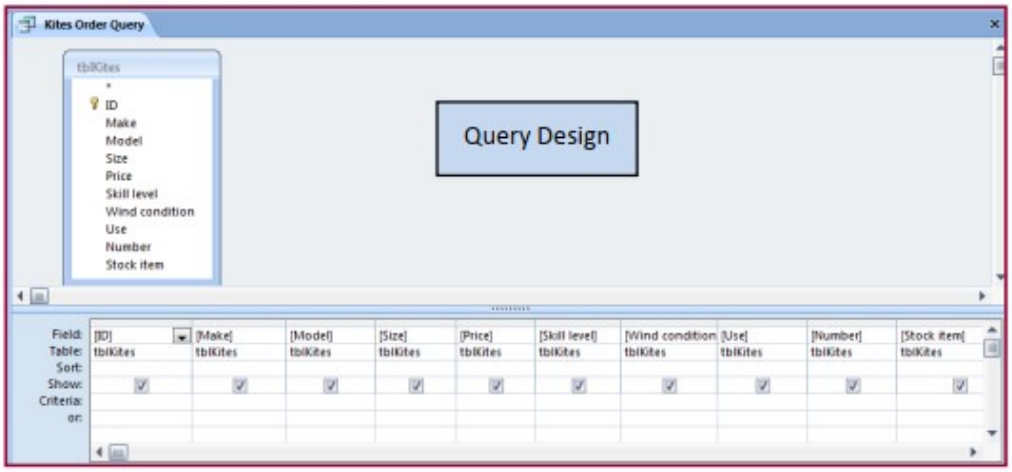
5. Choose a name which suits the task. I suggest **'Kites Order Query'**.

Select the **'Modify the Query Design'** option. This lets us create our searches.

Click **Finish**.



This takes us to the **Query Design screen** and from here we can tell Access which data we would like to search for:



Creating the Calculated Field 'Order' – How to do it:

The problem: Produce a report which:

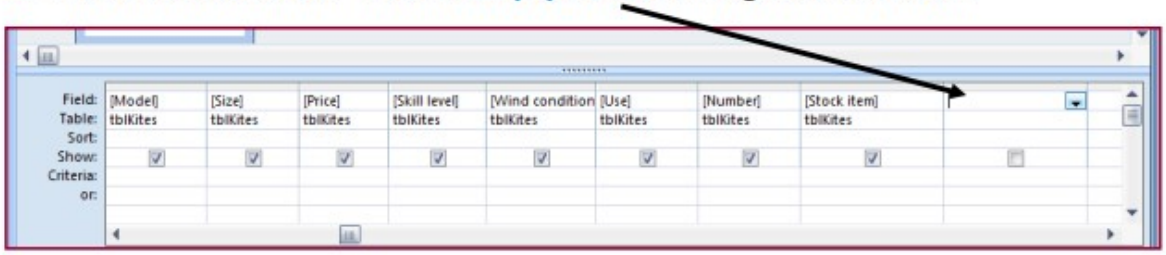
1. Contains a new field called **Order** which is **calculated at run-time**. This field will **calculate the Price multiplied by 3**

Calculated fields only work during run-time. This means that the calculation is made as the query is activated or ran.

NOTE: It is important to understand that Calculated fields are ALWAYS created within queries…… nowhere else.

1. In query design view find the **Stock Item field**.

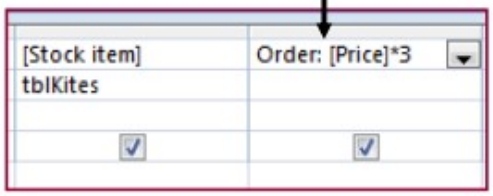
2. Click the mouse cursor into the **empty field** to the right of Stock Item.



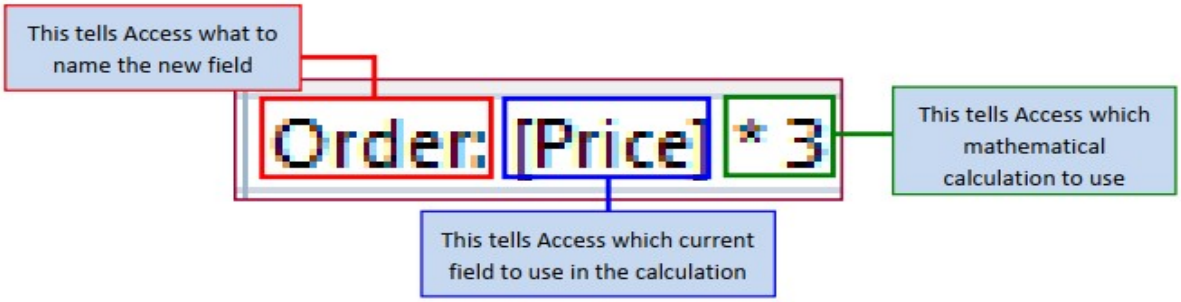
3. In the empty field type **Order: [Price] * 3**

This creates a new field called **'Order'**.

The Order field will **store the result** of the **[Price] fieldmultiplied by 3.**



Breakdown of what is happening here:



NOTE: It is essential that you follow the **correct syntax**. For example:

- Correct order
- Using a colon (**:**) after the new field name
- Using square brackets **[ ]** to surround the current field's name
- Using the correct mathematical symbol (see below)

Mathematical symbols are as follows:			
* (multiply)	/ (divide)	- (subtract)	+ (add)

4. Run the query by clicking the **Datasheet View** button.

Your query result will be displayed with a **calculated field** called **Order** that contains the **Price field multiplied by 3**.

Kites Order Query

ID	Make	Model	Size	Price	Skill level	Wind conditior	Use	Number	Stock item	Order
1	Flysurfer	Speed 2	12	$1,179.00	Intermediate	Medium	Land Board	1	Yes	$3,537.00
2	Flexifoil	Ion III	16	$1,138.95	Intermediate	Low	Kite Surf	1	Yes	$3,416.85
3	Flysurfer	Speed 2	8	$979.00	Intermediate	High	Land Board	1	Yes	$2,937.00
4	Flexifoil	Ion III	14	$1,058.95	Intermediate	Low	Kite Surf	0	No	$3,176.85
5	Ozone	Instinct Edge	11	$927.00	Experienced	Medium	Kite Surf	2	Yes	$2,781.00
6	Peter Lynn	Synergy	15	$914.00	Intermediate	Low	Land Board	3	Yes	$2,742.00
7	Airush	Flow	15	$898.95	Beginner	Low	Kite Surf	0	Yes	$2,696.85
8	Airush	Flow	10	$818.95	Beginner	Medium	Kite Surf	0	No	$2,456.85
9	Ozone	Instinct Sport	15	$999.00	Intermediate	Low	Kite Surf	0	No	$2,997.00
10	Ozone	Frenzy FX	13	$754.95	Experienced	Low	Snowkite	1	Yes	$2,264.85
11	Ozone	Manta II	10	$749.95	Intermediate	M			Yes	$2,249.85
12	Peter Lynn	Synergy	8	$724.00	Intermediate	H			Yes	$2,172.00

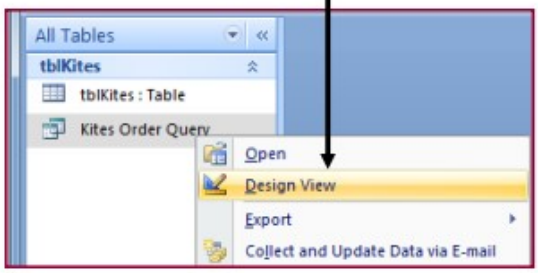
Order field multiplies the contents of the Price field and displays

Setting the 'Order' field to currency and 2 decimal places – How to do it:

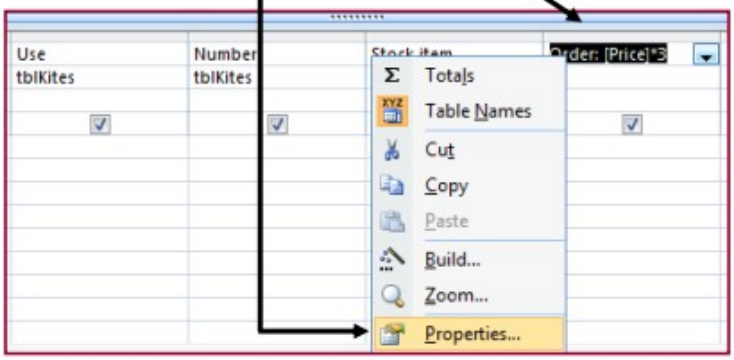
The Problem: Produce a report which:

2. Has the **Order** field set as **currency with 2 decimal places**

1. Open the **Kites Order Query** in **Design View**. To do this, **right click the query** and then select **Design View**.

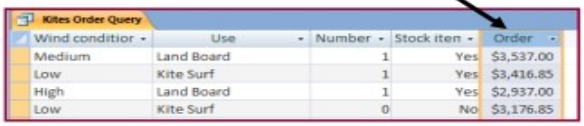


2. Highlight the **Order field** then **right click** and select **Properties**.

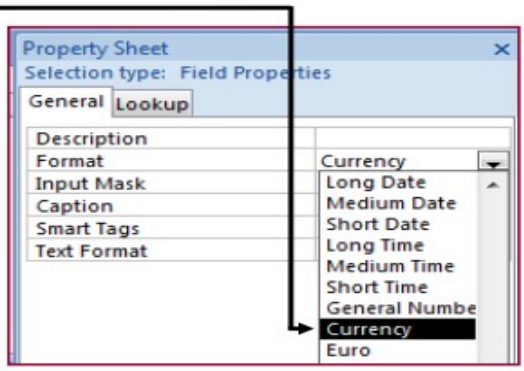


3. In the Properties Sheet change the **Format** to **Currency** by using the drop-down list.

4. Run the query in **Datasheet View** and check to make sure that your **Order field** is set to **Currency**.



Wind condition	Use	Number	Stock item	Order
Medium	Land Board	1	Yes	$3,537.00
Low	Kite Surf	1	Yes	$3,416.85
High	Land Board	1	Yes	$2,937.00
Low	Kite Surf	0	No	$3,176.85



NOTE: Currency fields should be set to 2 decimal places by default.

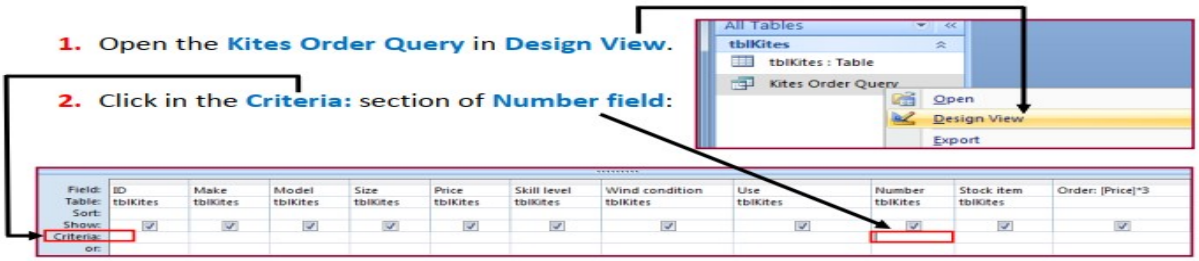
Creating some query search criteria – How to do it:

The Problem: Produce a report which:

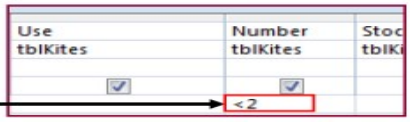
3. Shows only the records where **Number is less than 2 and Stock item is Yes**

1. Open the **Kites Order Query** in **Design View**.

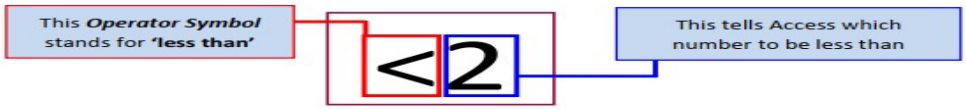
2. Click in the **Criteria:** section of **Number field**:



3. As the question requires us to search for only the records where the number is **less than 2** we need to type in **<2**



Breakdown of what is happening here:



NOTE: Operator symbols in the green cells can only be used on Number Fields or Currency Fields. Other operator symbols include:

> (More Than)	< (Less Than)	<= (Less Than or Equal to)
>= (More than or equal to)	Between And (Between 4 And 8 for example)	
= (Equal To)	OR (Low OR Medium OR High for example)	
LIKE * * (wordscontaining)	LIKE a* (starting with a)	LIKE *a (ending with a)

Wildcards for partial matching

Access allows the use of **wildcards** that represent one or more characters when specifying criteria. When using wildcards, the expression must be preceded by the keyword **Like**.

The asterisk symbol * matches 1 or more characters:

- **Like "ch*"** would return any names that begin with Ch such as Charles and Charlotte.
- **Like "*.co.uk"** would return any email addresses that end with .co.uk.
- **Like "*Theory*"** would return 'Quantum Theory for Beginners" and "Thermodynamics Theory".

A question mark ? will match a single character:

- **Like "al?n"** would return 'Alan' and 'Alun' but not 'Allen'

Square brackets [] are used to match a list or range of values:

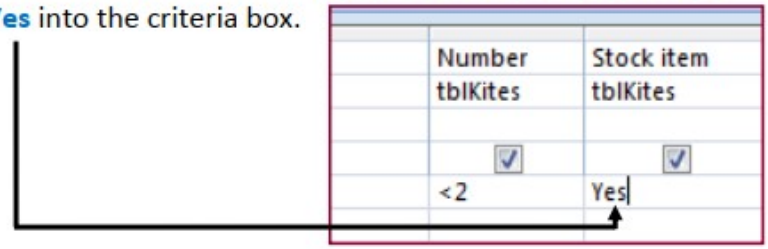
- **Like "[a,e,i,o,u]*"** returns any value beginning with a vowel.
- **Like "[a-d]*"** returns any value beginning with the letter a,b,c or d.

To exclude a character use the ! symbol:

- **Like "[!a]*"** returns all values that do not begin with the letter a.

4. Click in the **Criteria:** section of the **Stock Item field**:

5. The question wants us to search for records where **Stock Item is 'Yes'**. To do this simply type **Yes** into the criteria box.



6. Run the query in **Datasheet View** and check to make sure that the database has only returned records that match our criteria **(Number less than 2 and Stock Item of Yes)**.

All numbers are less than 2

All stock items are Yes

Kites Order Query

ID	Make	Model	Size	Price	Skill level	Wind conditior	Use	Number	Stock iten	Order
145	Best	Nemesis	12	$979.00	Beginner	Medium	Kite Surf	1	Yes	$2,937.00
146	Airush	Flow	5	$699.00	Beginner	High	Kite Surf	1	Yes	$2,097.00
1	Flysurfer	Speed 2	12	$1,179.00	Intermediate	Medium	Land Board	1	Yes	$3,537.00
2	Flexifoil	Ion III	16	$1,138.95	Intermediate	Low	Kite Surf	1	Yes	$3,416.85
3	Flysurfer	Speed 2	8	$979.00	Intermediate	High	Land Board	1	Yes	$2,937.00
7	Airush	Flow	15	$898.95	Beginner	Low	Kite Surf	0	Yes	$2,696.85
10	Ozone	Frenzy FX	13	$754.95	Experienced	Low	Snowkite	1	Yes	$2,264.85
16	Flysurfer	Pulse 2	6	$699.99	Intermediate	High	Land Board	1	Yes	$2,099.97
31	Flexifoil	Blade IV	6	$409.00	Experienced	Low	Freestyle Buggy / Land	1	Yes	$1,227.00
37	Flexifoil	Rage	2	$180.00	Beginner	High	Buggy / Land Board	1	Yes	$540.00
42	Flexifoil	Blurr	3	$299.00	Intermediate	Medium	Buggy	1	Yes	$897.00
49	Ozone	Yakuza	2	$234.95	Experienced	High	Buggy Racing	1	Yes	$704.85
50	Ozone	Instinct Light	3	$481.00	Beginner	High	Kite Surf	1	Yes	$1,443.00
53	Ozone	Cult	3	$229.95	Beginner	Medium	Land Board	1	Yes	$689.85
60	Peter Lynn	Hornet	6	$224.95	Beginner	Low	Buggy / Land Board	0	Yes	$674.85
62	Peter Lynn	Hornet	3	$142.95	Beginner	High	Buggy / Land Board	0	Yes	$428.85
109	Slingshot	Turbo 2	9	$779.00	Intermediate	Medium	Kite Surf	1	Yes	$2,337.00
144	Airush	Vapour	16	$999.00	Beginner	Low	Kite Surf	1	Yes	$2,997.00
(New)										

NOTE: All records that do not match our criteria are omitted from the search result

Records where Skill Level Item field is Not Beginner

1. In the **Labels Query** click in the **Criteria:** section of the **Skill Level field**.
2. Type **Not "Beginner"** into the **Skill Level** criteria field.

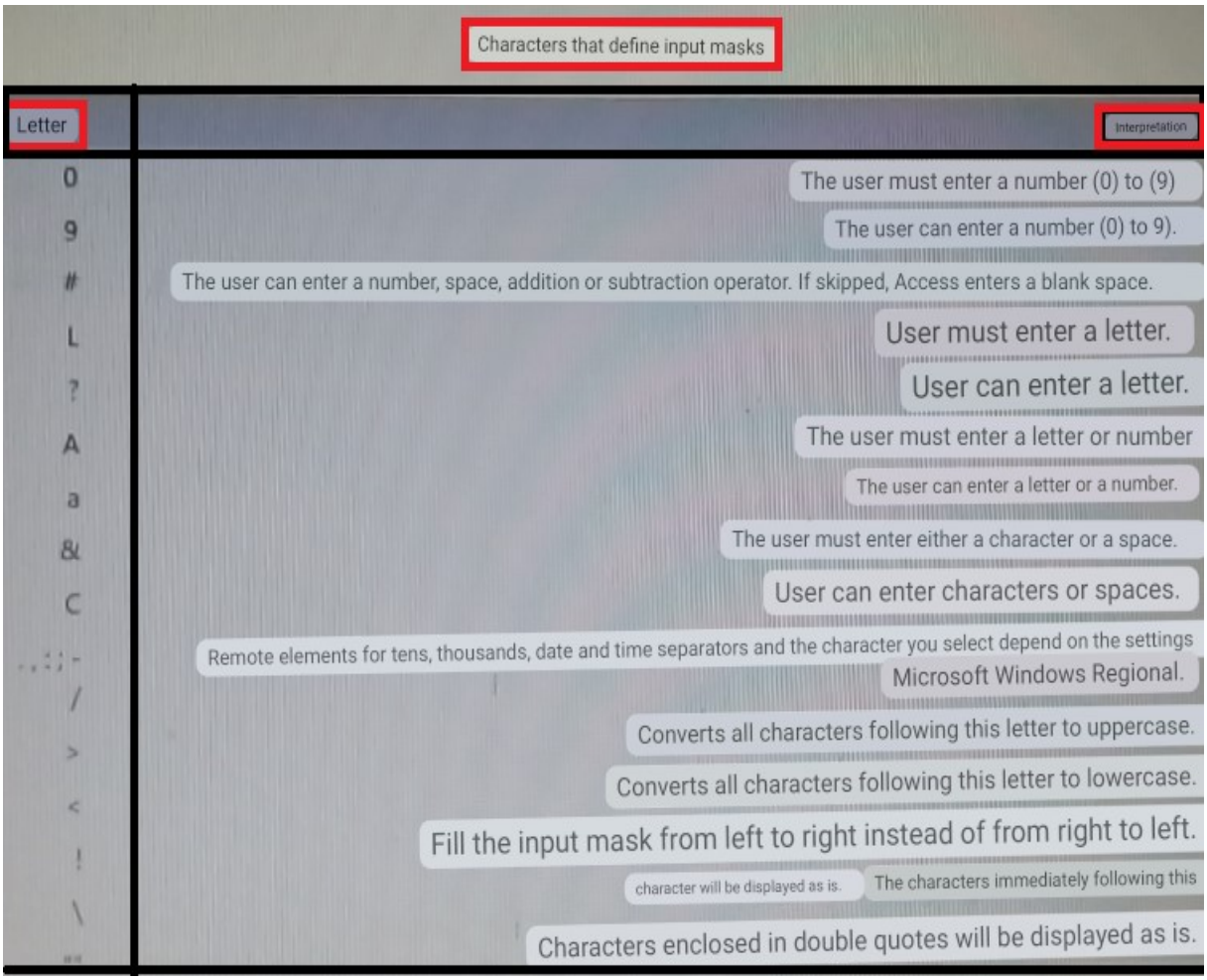
Field:	[ID]	[Make]	[Model]	[Size]	[Price]	[Skill level]	[Wind condition]	[Use]	[Number]	[Stock item]	
Table:	tblKites	tblKites	tblKites	tblKites	tblKites	tblKites	tblKites	tblKites	tblKites	tblKites	
Sort:											
Show:	☑	☑	☑	☑	☑	☑	☑	☑	☑	☑	☐
Criteria:						Not "Beginner"		Like "*Kite Surf*"		Yes	
or:											

NOTE: The Not " " criteria tell Access that you are looking for every other record apart from the word included within the Not " " criteria.

In this example there were 3 types of record held in the Skill Level field:

- **Beginner**
- **Intermediate**
- **Experienced**

Including 'Beginner' within the Not criteria excludes it from the search and Access will only look for records containing 'Intermediate' and 'Experienced'.


Characters that define input masks
Letter
Interpretation
0
The user must enter a number (0) to (9)
9
The user can enter a number (0) to 9).
#
The user can enter a number, space, addition or subtraction operator. If skipped, Access enters a blank space.
L
User must enter a letter.
?
User can enter a letter.
A
The user must enter a letter or number
a
The user can enter a letter or a number.
&
The user must enter either a character or a space.
C
User can enter characters or spaces.
Remote elements for tens, thousands, date and time separators and the character you select depend on the settings
Microsoft Windows Regional.
/
Converts all characters following this letter to uppercase.
>
Converts all characters following this letter to lowercase.
<
Fill the input mask from left to right instead of from right to left.
!
character will be displayed as is.
The characters immediately following this
\
Characters enclosed in double quotes will be displayed as is.