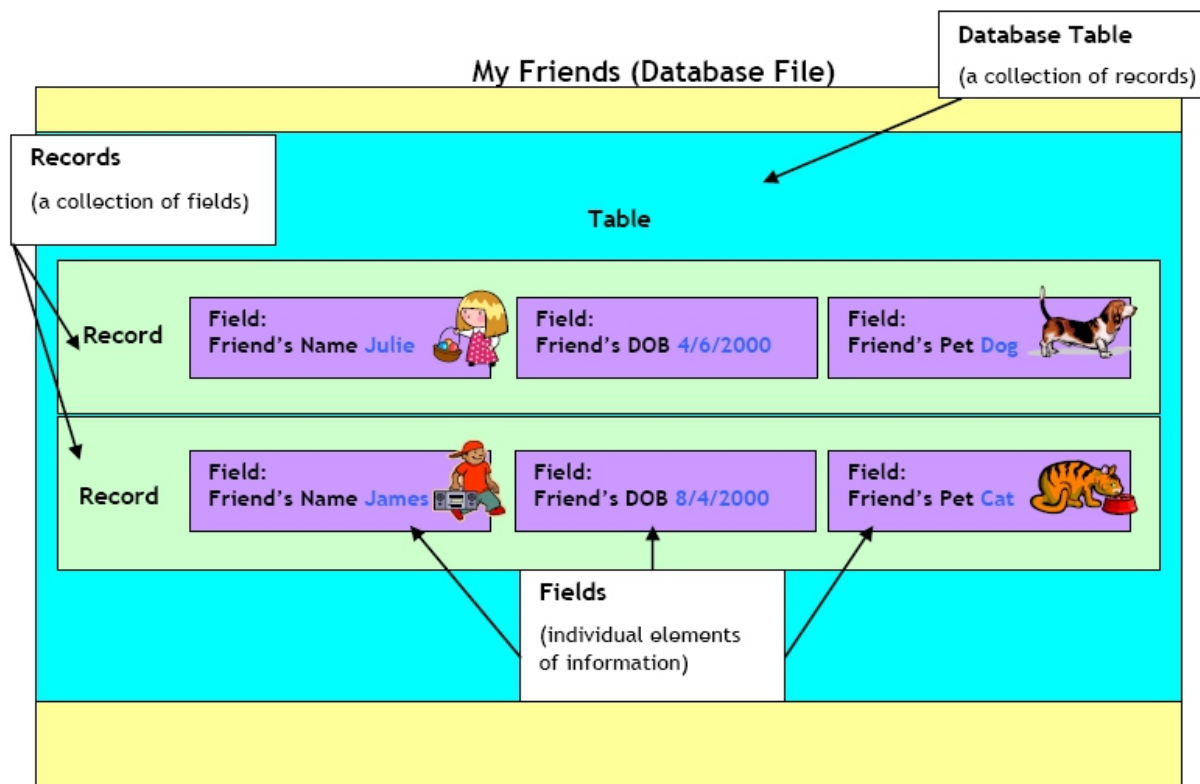## What Is a Database?

A **database** is an organized collection of information.

Information is divided into individual elements called fields.

Each record in a database is made up of a set of fields, which contain the individual elements of information for a particular topic.

The Structure of a Database

The diagram below illustrates the structure of a database.

MaxData provides simple ways to:

- Collect information for a particular purpose and sort and classify it
- Organize, refine, and present information
- Communicate by combining text and graphics
- Analyze, interpret, and select the elements required.

Database Design

A database is an organized collection of data. The primary function of a database is to enable the user to collect information and arrange the information in specific order, such as alphabetical, numerical, and/or chronological.

When designing and constructing a database you need to ask:
1. What information do you want to collect?
2. In what order do you want this information to be organized?

The answers to these questions will determine how you will design your database.

Image	Name	Length (ft)	Height (ft)
	Albertosaurus	27.0	10
	Allosaurus	36.0	15
	Baryonyx	34.0	12
	Camarasaurus	59.0	27
	Centrosaurus	20.0	6
	Chasmosaurus	15.0	4
	Coelophysis	10.0	6

Database Terms

Database Program: A database program is a software program such as Microsoft® Access that allows a user to create a database. MaxData is a database program that allows young children to create a database easily.

Database File: A database file is created within a database program and refers to a specific collection of data with a single focus or topic.
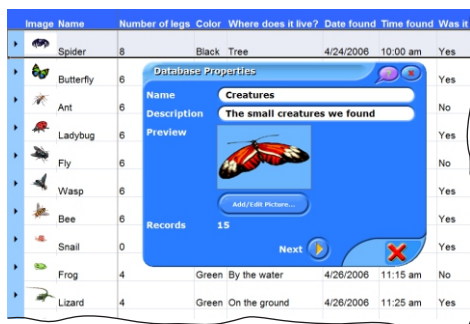
Field: Each record is made up of a series of fields, which store individual pieces of information inside a record.

Table: Information stored within a database file is stored in one or more tables.

Image	Name	Number of legs	Color
	Spider	8	Black
	Butterfly	6	Other
	Ant	6	Brown
	Ladybug	6	Red
	Fly	6	Brown
	Wasp	6	Black
	Bee	6	Yellow
	Snail	0	Brown
	Frog	4	Green
	Lizard	4	Green
	Dragonfly	6	Black

Record: Each table is made up of records that are identical in structure. A record contains information about a single item in your database.

Tables in MaxData

When you create a database in MaxData, a table will be automatically created. You will be prompted to add fields that are relevant to the topic of your database.

The table will display the fields that were added during the creation of your database.

Creating Fields in MaxData

A MaxData Table

What Are Forms?

Like a paper form, a database form collects and organizes information. In forms, you can enter data into your database and display this data for review. Forms are designed to make on-screen data entry and retrieval easier. Another advantage of using forms to enter and edit data is that you look at only one record at a time.

MaxData Data Entry Form

Forms in MaxData

MaxData automatically creates a database entry form once you have added the fields to your database. This data entry form will automatically be updated when you add, delete, or edit the fields in your database.

The data entry form includes fields that have been added to your database.

What Are Filters (Queries)?

A filter is a way of asking questions about the data stored in your tables. With filters, you can look at selected data without viewing all the records. Filters are useful because they let you organize your data without tampering with the actual records.

Filters in MaxData

MaxData has a simple filter form which allows the users to filter by a single criteria and an advanced filter form which allows users to filter by up to three criteria.

Simple Filter Form

Fitler Result

	Image	Name	Number of legs	Color	Where does it live?	Date found	Time found	Was it on its own?
▶		Frog	4	Green	By the water	4/26/2006	11:15 am	No
▶		Lizard	4	Green	On the ground	4/26/2006	11:25 am	Yes
▶		Grasshopper	6	Green	On the ground	4/27/2006	10:00 am	Yes

What Are Reports?

Reports give users a method for presenting selected data in a meaningful way. Reports are designed to be printed out rather than viewed on a computer screen. You can combine text, data, pictures, lines, boxes, graphs, and drawings to produce a report that visually communicates your findings.

A MaxData Column Report

Reports in MaxData

MaxData has a range of reporting options including Table, Column, Tally, Chart, and Custom reports.
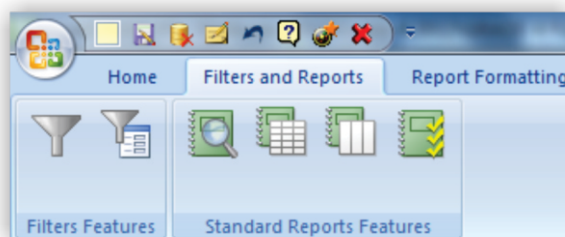
Fields

The structure of database specifies information about the fields maintained in the records of that database, including: the name of each field and the type of data maintained in each field.

Field Names

The field name should be as concise and descriptive as possible. Names should be one or two words long, and should be some sort of key phrase indicating the type of information to be contained in the field.
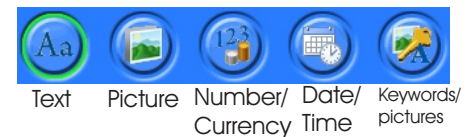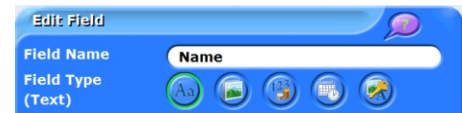
Field Names

Image	Name	Number of legs	Color	Where does it live?	Date found	Time found
🕷	Spider	8	Black	Tree	4/24/2006	10:00 am
🦋	Butterfly	6	Other	Flowers	4/24/2006	10:05 am
🐜	Ant	6	Brown	In the ground	4/24/2006	10:10 am
🐞	Ladybug	6	Red	Flowers	4/24/2006	10:11 am

Field Types

Basically, every field name should have a field type. Below are the valid field types.

Field Type	Valid Entries
String (Text)	Any combination of alphabetic or alphanumeric characters. Examples: Name (alphabetic), Height (numeric); Address (alphanumeric)
Picture	A drawing or a picture.
Number	Numeric information that is likely to be used in a calculation. Examples: Pocket Money, Rainfall. Non-examples: Zip Code, Phone Number
Date/Time	A calendar date or time of the day.

Edit Field

Field Name: **Name**
Field Type (Text)

Aa | Picture | 123 | Date | Keywords/pictures
Text | Picture | Number/Currency | Date/Time | Keywords/pictures

Defining the Fields of a Sample Database

When creating a database, first look at the information you want to collect and decide what separate pieces of information you need for analyzing your data.
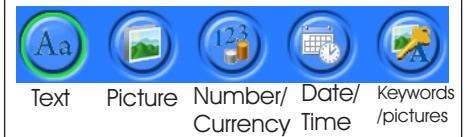
For example, let's say that you wanted to create a database of your friends. You will need at least two pieces of information for each friend: Name and Address or Age. To make this database more usable, you need to subdivide this information further.

Sample Fields with Types

Now, let's determine the field type for each field in our sample table. Take note of the field type symbols below.


Edit Database Fields
- Add Field...
- Aa First Name
- Aa Last Name
- Gender
- Eye Color

Edit Database Fields
- Add Field...
- Eye Color
- Hair Color
- 123 Height (in)
- 123 Age

Field Type Symbols

Aa	Picture	123	Date/	Keywords
Text	Picture	Number/ Currency	Date/ Time	Keywords /pictures

Sample Table

Image	First Name	Last Name	Gender	Eye Color	Hair Color	Height (in)	Age
	Brooke	Nunez	Girl	Green	Blonde	60	10
	Shem	Caangay	Boy	Brown	Black	75	8
	Prexie	Caangay	Boy	Blue	Blonde	80	10
	Elle	Pinatil	Boy	Green	Black	50	6

Label Up
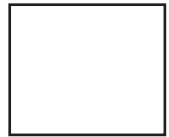
Score

Activity 82

Directions:

1. Launch Inspiration.
2. Open and answer Lesson 27 Activity 82 **Label Up**.
3. Drag the label to the blank to complete each statement.
4. Save the activity as **Label Up**.

Preview:

MaxData Activity 1 Database Facts.kid

File   Edit   Goodies   Sound   Teacher   Help

String   Picture

Information

Fields   Database

Number   Date/Time

1._____ is an organized collection of   information.

2._____ is divided into individual elements
            called_____.

3. Each _____ in a database is made up of a set
                    of_____.

4. _____ field type in any combination.

5. _____ field type is a drawing or picture.

6. _____ field type is numeric.

7. _____ field type is a calendar.

Arial   24   A A A A