

Science

العلم

Is One Means of Acquiring  
Knowledge

هي إحدى وسائل الحصول على المعرفة

## Means of Acquiring Knowledge

وسائل الحصول علي المعرفة

- |              |         |
|--------------|---------|
| 1. Mysticism | الخرافه |
| 2. Authority | السلطه  |
| 3. Tradition | العادات |
| 4. Intuition | البديهه |
| 5. Science   | العلم   |

Is One Socially Acceptable,  
thought to be reliable, Means of  
Acquiring Knowledge


هي إحدى وسائل الحصول علي المعرفة المتفق  
عليها بين البشر للوصول الي الحقائق

**How Scientists Work**

### Investigating


This plan will help you work like a scientist.

**STEP 1 — Observe and ask a question.**




Which car will roll farther?

**STEP 2 — Form a hypothesis.**




The blue car will roll farther because it is heavier.

**STEP 3 — Plan a fair test.**




I'll start each car at the same spot.

**STEP 4 — Do the test.**




I'll measure how far each car rolls.

**STEP 5 — Draw conclusions. Communicate results.**



My hypothesis was correct. The red car did not roll as far as the blue car.

**Investigate More**



I wonder if the height of the ramp will make a difference.

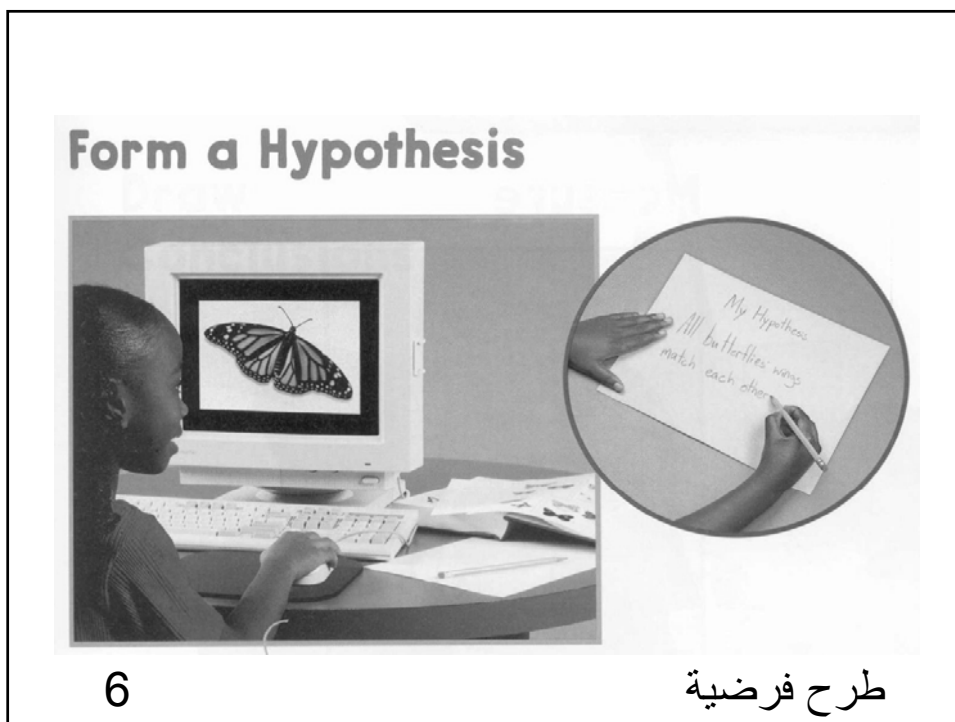
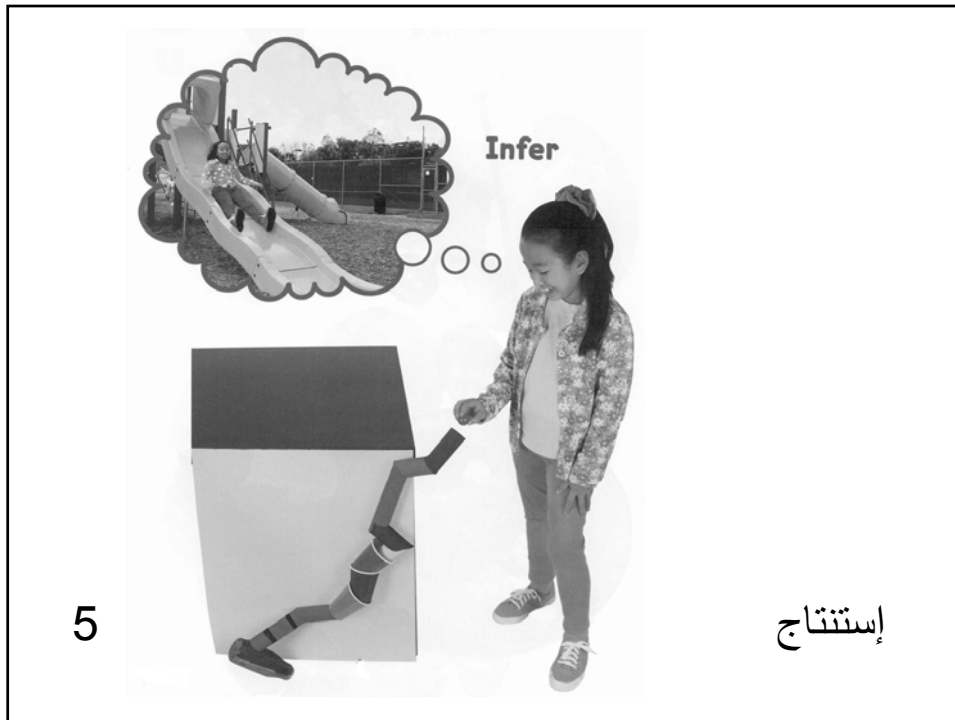
**How Scientists Work**

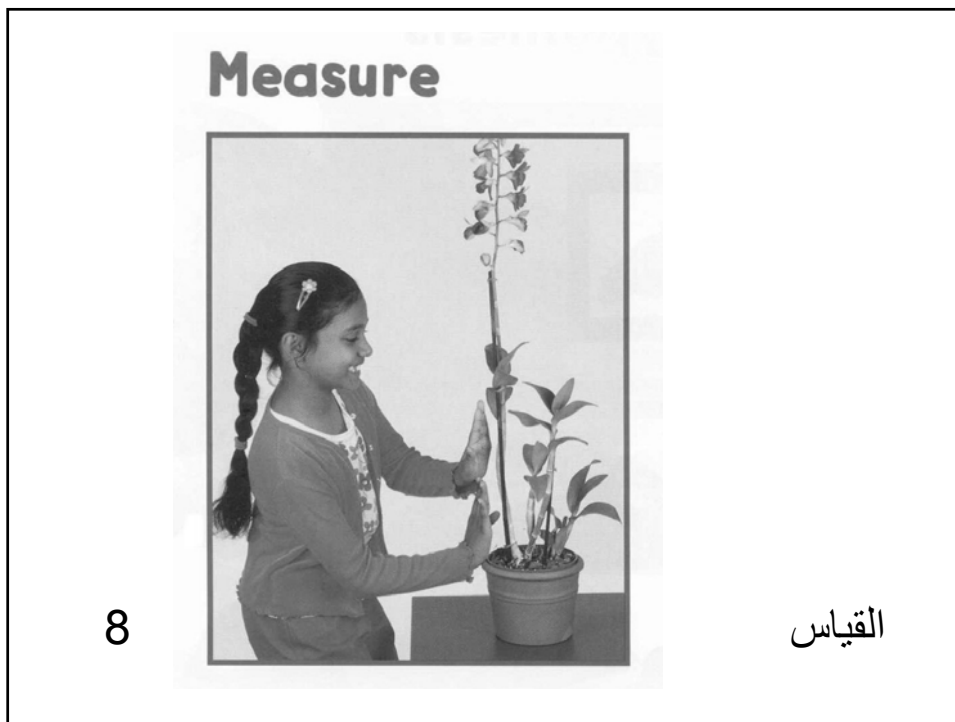
## Using Science Skills

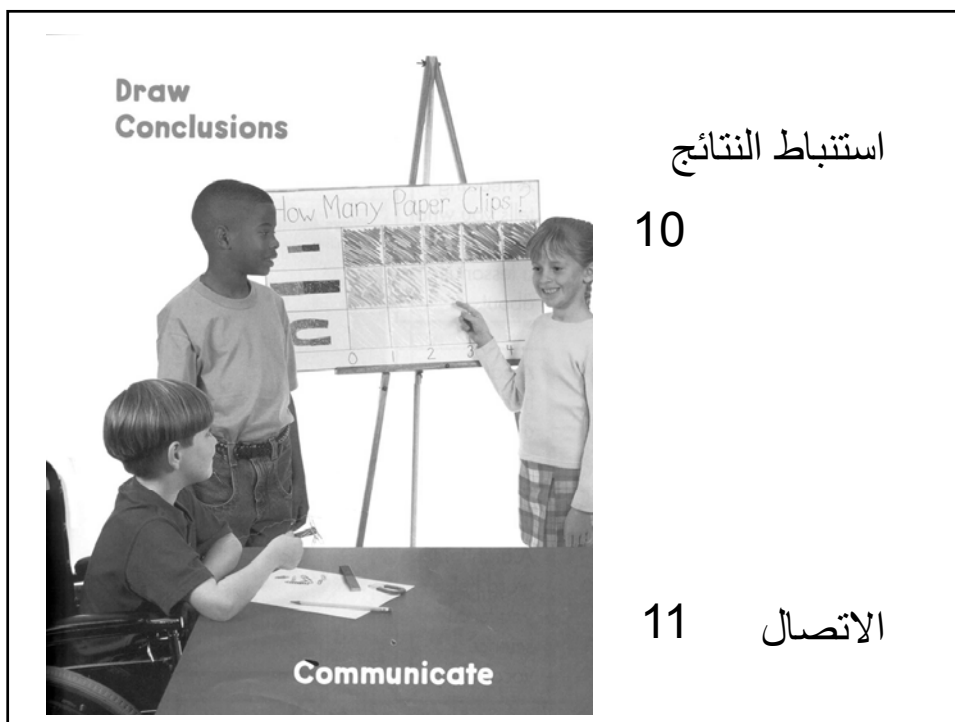
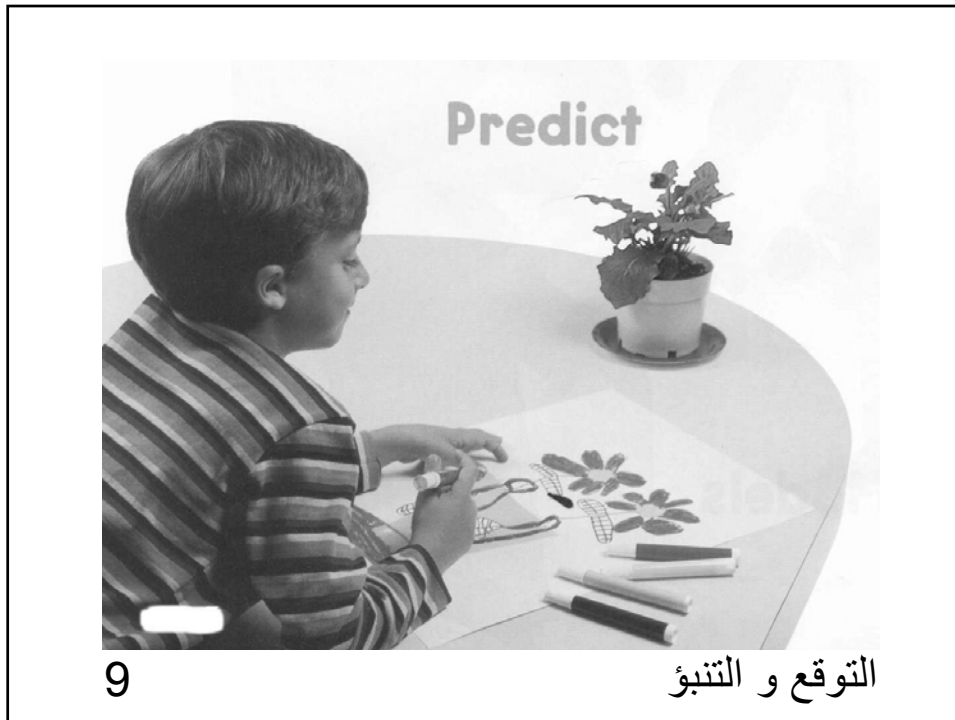
مهارات العلم











Science Skills	مهارات العلم
1. Observe	الملاحظة
2. Compare	مقارنة
3. Sequence	تتابع - تسلسل
4. Classify	تصنيف
5. Infer	إستنتاج
6. Form a Hypothesis	طرح فرضية
7. Make Models	عمل النماذج
8. Measure	القياس
9. Predict	التوقع و التنبؤ
10. Draw Conclusions	استنباط النتائج
11. Communicate	الاتصال
OTHERS	

OTHER Science Skills	مهارات العلم الاخري
1. Critical Thinking	التفكير الناقد
2. Critical Reading	القراءة الناقد
3. Writing	الكتابه
4. Listening	حسن الاستماع
5. Info. Searching	البحث عن المعلومه
Etc.	الخ ....

The Scientific Method		الأسلوب العلمي
NONSCIENTIFIC		SCIENTIFIC
1. Casual activity		Conscious activity
2. Unplanned inquiry		Deliberate inquiry
3. Generalization errors		Replication is possible
4. Illogical reasoning accepted		Follow logical reasoning
5. Careless with mistakes		Take precautions
6. Informal or no observations		Systematic observations

Goals of Science		أهداف العلم
<u>WHY?</u>	1. Explanation	التفسير
<u>WHAT?</u>	2. Prediction	التنبؤ
	1'. Understanding	الفهم
	Theory	النظريه
↓	<u>Causal relationship</u>	العلاقة السببيه

Conditions of Science	شروط العلم
1. Logical Reasoning	الاستدلال المنطقي
2. Empirical Verification	التحقق الامبريقي

Assumptions of Science	افتراضات العلم
1. Nature is orderly	
2. We can know nature	
3. Knowledge is superior to ignorance	
4. All natural phenomena have natural causes	
5. Nothing is self evident	
6. Knowledge is derived from the acquisition of experience	