Scientific Observation
Observe and record behavior systematically in a natural setting such as home, school, public park; settings encourage people to behave as they usually do.
Can be performed in a laboratory or in searches of archival data such as historical records of birth and deaths.
LIMITATION: Does not indicate what causes people to do what they do

Experiment
Research method that scientists use to establish cause
Significance – Indicates whether the results might have occurred by chance. See page 22.

Survey
Information is collected from a large number of people by interview, questionnaire, and some other means. This is a quick and direct way to obtain data.
LIMITATION: Getting valid data is not easy. People refuse to answer and others present themselves as they would like to be perceived not as they really are.

Case Study
Intensive study of one individual. Used when trying to understand the particular influences and characteristics of a person so that the professional can find services, solve a crime, help the person overcome a problem, etc. Often presented to colleagues for insight and suggestions. Raises hypotheses that need more formal exploration or provide an example that might be instructive.
LIMITATION: Case studies can illustrate developmental ideas but cannot be a primary research source because what is true for one person may not be true for another.

Three Research Designs that Include Aging to Track Ongoing Development:
Cross-Sectional Research
Most convenient and most common way to study development. Groups of people who differ in age but share other important characteristics such as education, SES, and ethnicity are compared.
LIMITATION: Difficult to ensure that the various age groups being compared are similar in every important background variable. Measures group differences not patterns of individual change over time – however these group differences are interpreted to suggest a pattern of development

Longitudinal Research
Involves collecting data repeatedly on the same individuals as they age – over many years such as from newborn to adolescence.
LIMITATIONS: Participants may withdraw; move to unknown address or die. These results can skew the final results if those who disappear are unlike those who stay (and they usually are). Another problem is that participants become increasingly aware of the questions or the goals of the study and therefore may change in ways that most people do not. Having to wait for analysis of the effects of longitudinal research may mean that findings come too late to help people living now.

Cross-Sequential Research
Also referred to as the cohort-sequential research or time-sequential research). Researchers study several groups of people of different ages (cross-sectional approach) and follow all of them over the years (longitudinal approach). This disentangles differences related to chronological age from those related to historical period. Example in textbook: can compare findings for a group of 18 year olds with findings for the same individuals of age 8 as well as with findings for groups who were 18 a decade or two earlier and groups who are 8 years old now. See Figure 1.7
This is the most time consuming and most complex approach but it also yields the best information about development.