**Unit 4**



**Unit 4 – Designing Studies**

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| Date | Topic | Keeper Notes/ reading assignment for next day | Written Assignment class |
| Tuesday1/7 |   **4.1 Sampling & Surveys****Against all Odds -#17Sample and Survey** |   [Keeper 4.1 -Sampling & Surveys](http://www.hopkins.k12.ky.us/webpages/vbrowning/files/tps4e_ch4_4.1.ppt) Read pp 205-215Workbook 66 |  p. 2261-11 odd |
| Wednesday1/8 |   **4.1 Sampling & Surveys****Activity** |   [Keeper 4.1 -Sampling & Surveys](http://www.hopkins.k12.ky.us/webpages/vbrowning/files/tps4e_ch4_4.1.ppt)Read pp 215-225worksheet |  p 22717-25 oddp.22931-35 odd |
| Thurs1/9 |   **4.2 Experiments****Against all Odds #14,#15** |   [Keeper 4.2 - Experiments](http://www.hopkins.k12.ky.us/webpages/vbrowning/files/tps4e_ch4_4.2.ppt)Read pp.231-242Workbook 71-72 |  p.230&25337-42 all51-67 odd |
| Friday1/10 |   **4.2 Experiments** | [Keeper 4.2 - Experiments](http://www.hopkins.k12.ky.us/webpages/vbrowning/files/tps4e_ch4_4.2.ppt)Read 242-252Worksheet |  p.25669-85 odd |
| Monday1/13 |   **4.3 Using Studies Wisely****Review** | [Keeper 4.3 - Using Studies Wisely](http://www.hopkins.k12.ky.us/webpages/vbrowning/files/tps4e_ch4_4.3.ppt)Read pp261-268Workbook 77 Mult. ChoiceFrappy |  p.26091-98 all 102-10 allPage 272 R-4.1-R4.12 |
| Tuesday1/14 | Review/ FRQ |   PRACTICE TEST 4A | Page 274 T1-T14 |
| Wednesday1/15 |  TEST |   |  Guided READING DUE |
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**STANDARDS**

**Sampling and Experimentations: Planning and Conducting a Study**

A.  Overview of methods of data collection

1. Census
2. Sample Survey
3. Experiment
4. Observational Study

B. Planning and conduction studies

1. Characteristics of a well-designed and well-conducted survey
2. Population, samples, and random selection
3. Sources of bias in sampling and surveys
4. Sampling methods, including simple random sampling, stratified random sampling, and cluster sampling

C. Planning and conducting experiments

1. Characteristics of a well-designed and well-conducted experiment
2. Treatments, control groups, experimental units, random assignments, and replication
3. Completely randomized design
4. Randomized block design, including matched pairs design

D. Generalizability of results and types of conclusions that can be drawn from observational studies, experiments, and surveys

**QUICK NOTES**

[Chapter 4 - Designing Studies Quick Notes](https://cobbk12.blackboard.com/bbcswebdav/pid-1327261-dt-content-rid-5609084_2/xid-5609084_2) 

**LESSONS**

**4.1 Sampling & Surveys**

* Identify the population and sample in a sample survey.
* Identify voluntary response samples and convenience samples.  Explain how these bad sampling methods can lead to bias.
* Describe how to use ***Table D*** to select a simple random sample (***SRS***).
* Distinguish a simple random sample from a stratified random sample or cluster sample.  Give advantages and disadvantages of each sampling method.
* Explain how undercoverage, nonresponse, and question wording can lead to bias in a sample survey.

**4.2 Experiments**

* Distinguish between an observational study and an experiment.
* Explain how a lurking variable in an observational study can lead to confounding.
* Identify the experimental units or subjects, explanatory variables (factors), treatments, and response variables in an experiment.
* Describe a completely randomized design for an experiment.
* Explain why random assignment is an important experimental design principle.
* Distinguish between a completely randomized design and a randomized block design.
* Know when a matched pairs experimental design is appropriate and how to implement such a design.

**4.3 Using Studies Wisely**

* Determine the scope of inference for a statistical study.
* Evaluate whether a statistical study has been carried out in an ethical manner.