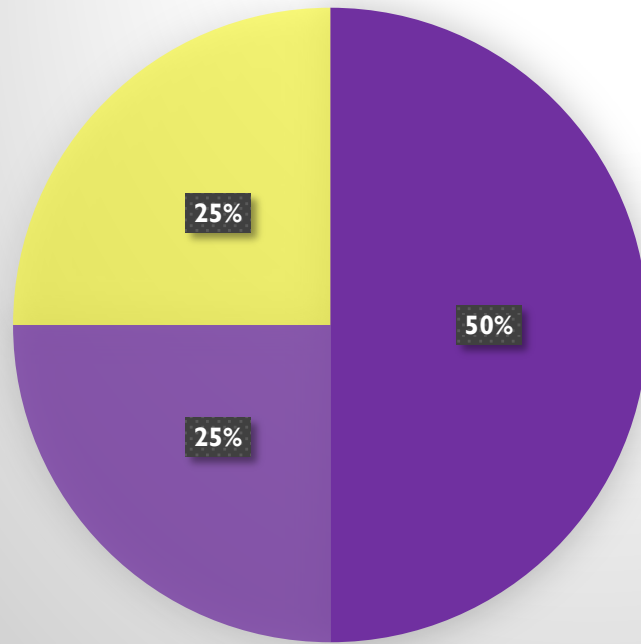


TEST FORMAT AND TOPICS OVERVIEW

UIL BIOLOGY
2022-2023

Dr. Michelle McGehee

State Contest Director



- Knowledge and Comprehension
- Application and Analysis
- Synthesis and Evaluation

QUESTION DIFFICULTY LEVELS

THE TESTS: INVITATIONAL A

- Basic content
- Very few higher level questions
- Provides the foundation for District

- Hints
 - Bolded terms in textbooks
 - Basic facts on processes and concepts

THE TESTS: INVITATIONAL B

- Expands the content type from Invitational A
- More difficult than Invitational A
- Still not 25% higher-level questions

- Hints
 - Bolded terms
 - Basic facts
 - Begin making connections in content

THE TESTS: DISTRICT

- Expands on both A and B content
 - Many questions “piggy back” from Invitational questions
- More higher-level questions, ~25%
- Introduces new content for Regional and State
 - An expanded foundation
- Hints
 - Understand why the answers on invitational tests are correct
 - Look up the content for the answers that are incorrect on Invitational tests

THE TESTS: REGIONAL

- More higher-level questions, ~25%
- Advanced content from previous tests
 - Making the invitational and district content more difficult
- Hints
 - "What can make this question more difficult?"
 - Connect the concepts
 - Topics list starts to blur

THE TESTS: STATE

- Combines and blurs the topics
- More analysis of information given, or prior knowledge needed
- Very few “what is this?” type questions, >25% higher-level
- At least one really “out there” question

- Hints
 - Be able to make connections among topics
 - Look at the incorrect answers from previous tests



TEN
MAIN
TOPICS

1. Relationship Between Structure and Function

- Basic biochemistry, cell biology, biological membranes, membrane transport, structure and function of organic macromolecules

2. Cellular and Acellular Replication

- Cell cycle, regulation of the cell cycle, DNA replication, genome structure, meiosis and sexual reproduction, viral replication



TEN
MAIN
TOPICS

3. **Energy Transformations**

- Metabolism, cellular respiration, photosynthesis, enzymes

4. **Gene Expression**

- Protein synthesis, regulation of gene expression, effects of mutations

5. **Genetics and Inheritance**

- Mendelian inheritance, non-Mendelian inheritance, genetic crosses, DNA technology



TEN
MAIN
TOPICS

6. Evolution

- Natural selection, reproductive success, microevolution (selection, mutation, recombination migration, genetic drift, gene flow), evidence of macroevolution (speciation, extinction), evidence for unity in diversity

7. Origin and Diversity of life

- Taxonomy, domains of life, animal and plant behavior, biological hierarchy



TEN
MAIN
TOPICS

8. **Ecology and the Environment**

- Population biology, community dynamics, organism relationships, biogeochemical cycles, ecosystem stability

9. **Basic Human Anatomy & Physiology**

- Tissue types and corresponding cell types, homeostasis (regulation, effects of imbalance), organ systems (any of them!)



TEN
MAIN
TOPICS

10. Diseases

- Eukaryotic diseases, viral diseases, bacterial diseases, pathogenesis, etiologic agents, and disease sign or symptoms (differential diagnosis)
- The focus this year:
 1. Eukaryotic diseases
 2. “In the news”

HINTS!!

- **Usually** two from each main topic
 - Almost never from the same subtopic in a single test
 - Attempt to spread subtopics across tests
 - Topics become more blurred as tests progress, especially State test
- Questions sometimes piggy back on content from other tests
 - Study Tip: Determine why the incorrect answers are wrong, or in what situation/context could they be correct
 - Look up incorrect answers to learn about them
- Bolded words in textbooks are super helpful for creating a foundation
- Diseases
 - Gram-positive bacterial diseases
 - In the news...CDC,WHO,NIH,public health