



## Arithmetic Skills

- Basic addition and subtraction
- Basic multiplication
- Basic division
- Changing fractions to decimals
- Changing decimals to fractions
- Place value
- Roman numerals
- Multivariable fractions
- Multiplying fractions
- Dividing fractions
- Ratios and proportions
- Calculating percentages
- Converting percentages to decimals

## Algebra

- Commutative rule of addition
- Commutative rule of multiplication
- Associative rule of addition
- Associative rule of multiplication
- Distributive rule of multiplication
- Algebraic formulas

$$(a + b)^2 = a^2 + 2ab + b^2$$

$$(a - b)^2 = a^2 - 2ab + b^2$$

$$a^2 + b^2 = (a + b)^2 - 2ab$$

$$a^2 - b^2 = (a + b)(a - b)$$

$$(a + b)^3 = a^3 + 3a^2b + 3ab^2 + b^3$$

$$(a - b)^3 = a^3 - 3a^2b + 3ab^2 - b^3$$

$$a^3 + b^3 = (a + b)(a^2 - ab + b^2)$$

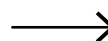
$$a^3 - b^3 = (a - b)(a^2 + ab + b^2)$$

$$(a + b + c)^2 = a^2 + b^2 + c^2 + 2ab + bc + 2ca$$

## Measurement and Data

- Using the metric system
- Calculating volume and capacity
- Measuring temperature
- Measuring weight
- Measuring distance
- Measuring temperature
- 12-hour clock vs. military time
- Interpreting graphs and tables

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# HESI READING COMPREHENSION CHECKLIST

## Core Comprehension Skills

- Identifying the main idea
- Identifying supporting details
- Identifying the conclusion
- Identifying the theme
- Identifying the setting
- Summarizing
- Recognizing the structure of a passage
- Identifying transition words and phrases

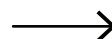
## Critical Reading

- Fact vs. Opinion
- Objective statements
- Subjective statements
- Comparing and contrasting

## Interpretation of Text

- Identifying word meanings using context
- Making logical inferences
- Identifying the purpose of a passage
- Identifying the tone of a passage
- Similes and metaphors
- Personification
- Points of view

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## Foundations of Vocabulary

- Common prefixes and suffixes
- Common root words
- Compound words
- Acronyms and abbreviations
- Etymology (the origin of words)

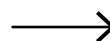
## Advanced Vocabulary

- Aseptic
- Contusion
- Embolus
- Hypertension
- Idiopathic
- Intravenous
- Nosocomial
- Palpation
- Percussion
- Prone
- Sphygmomanometer
- Supine
- Tachycardia
- Thoracic

## General Vocabulary

- Acute
- Antidote
- Benign
- Bilateral
- Bile
- Callous
- Cardiac
- Cartilage
- Cast
- Cavity
- Cephalic
- Concave
- Constrict
- Convulsive
- Defecate
- Depress
- Desiccated
- Impaired
- Incidence
- Incision
- Infection
- Inflamed
- Invasive
- Ketones
- Kinetic
- Laceration
- Lateral
- Lethargic
- Malignant
- Metabolism
- Neurologic
- Parameter
- Pathology
- Posterior
- Prognosis
- Quarantine
- Rationale
- Regimen
- Remission
- Sublingual
- Supposition
- Syndrome
- Triage
- Vascular
- Vitals

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## Parts of Speech

- Nouns
- Pronouns
- Verbs
- Adjectives
- Adverbs
- Prepositions
- Conjunctions
- Interjections

## Commonly Confused Words

- Their vs. there vs. they're*
- Its vs. it's*
- Your vs. you're*
- Affect vs. effect*
- Lie vs. lay*
- Fewer vs. less*

## Common Grammatical Mistakes

- Misplaced modifiers
- Incorrect pronoun usage
- Subject-verb agreement
- Verb tense
- Run-on sentence
- Sentence fragments

## Important Terms

- Active voice and passive voice
- Mood
- Tone
- Diction
- Syntax

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## Basics of Biology

- Properties of water
- Hydrogen bonding
- Cohesion and adhesion
- Water as a universal solvent
- Polarity of water
- Carbohydrates
- Lipids
- Proteins
- Nucleic acids
- Catabolic and anabolic pathways
- Chemical processes within organisms

## Cellular Biology

- Eukaryotic vs. prokaryotic
- Nucleus
- Mitochondria
- Chloroplasts
- Endoplasmic reticulum
- Golgi apparatus
- Lysosomes
- Cell membrane
- Cellular respiration
- ATP
- Photosynthesis
- Mitosis and meiosis

## Genetics

- Mendelian genetics
- Non-Mendelian inheritance
- Structure and function of DNA
- The role of DNA in protein synthesis
- DNA replication, transcription, and translation
- Genetic code

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## Fundamental Concepts

- Scientific notation
- The metric system
- Celsius
- Fahrenheit
- Kelvin

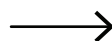
## Atomic and Molecular Structure

- Atomic structure
- Atomic theory
- Periodic table of elements
- Ionic bonds
- Covalent bonds
- Metallic bonds
- Molecular geometry
- Polarity

## Chemical Reactions and Equations

- Balancing chemical equations
- Coefficients in chemical formulas
- Subscripts in chemical formulas
- Synthesis reactions
- Decomposition reactions
- Single replacement reactions
- Double replacement reactions
- Combustion reactions
- Calculating reactants and products
- Molar relationships
- Oxidation states
- Redox reactions
- Electron transfer

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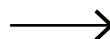
## Chemical Properties and Behaviors

- Reaction rates
- Temperature
- Concentration
- Surface area
- Catalysts
- Dynamic equilibrium
- Reversibility
- Le Chatelier's principle
- Properties of solutions
- Molarity
- Molality
- Percent composition
- pH scale
- Acid-base reactions
- pKa and pKb
- Boyle's Law
- Charles's Law
- Avogadro's Law

## Advanced Topics

- Radioactivity
- Nuclear reactions
- Half-life
- Nuclear energy
- Enthalpy
- Entropy
- Biochemistry

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# HESI ANATOMY AND PHYSIOLOGY CHECKLIST

## Body Systems

- Integumentary system
- Skeletal system
- Muscular system
- Nervous system
- Endocrine system
- Circulatory system
- Respiratory system
- Digestive system
- Urinary system
- Reproductive system

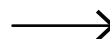
## Cellular and Tissue Structure

- Histology
- Epithelial tissue
- Connective tissue
- Mitosis and meiosis

## Basic Concepts and Terminology

- Anterior/posterior
- Superior/inferior
- Medial/lateral
- Proximal/distal
- Superficial/deep
- Sagittal plane
- Coronal plane
- Transverse plane
- Dorsal cavity
- Ventral cavity
- Homeostasis
- Metabolism
- Anabolism and catabolism

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## Energy and Work

- Kinetic energy
- Potential energy
- Conservation of energy
- Definition of work
- Relationship between work and energy
- Concept of power

## Gravitation

- Newton's law of universal gravitation
- Gravitational fields
- How gravity affects motion in space

## Waves and Acoustics

- Sound waves
- The Doppler effect
- Properties of waves
- Types of waves

## Mechanics

- Displacement
- Velocity
- Speed
- Vectors
- Uniform and non-uniform acceleration
- Projectile motion
- Newton's laws of motion
- Friction
- Rotation
- Inertia
- Torque
- Centripetal force
- Uniform circular motion
- Linear momentum
- Impulse

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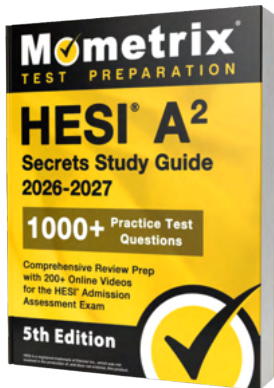
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