

Periodic table multiple choice test Document

Understanding the Periodic Table Multiple Choice Test: An Essential Tool for Chemistry Learners

Periodic table multiple choice test have become an indispensable resource for students and educators aiming to deepen their understanding of chemical elements and their properties. These tests serve as effective assessment tools, reinforcing knowledge, improving recall, and preparing students for exams such as the SAT Chemistry, AP Chemistry, or university-level chemistry courses. In this comprehensive guide, we will explore the significance of these tests, how to prepare for them, and strategies to excel.

The Significance of Periodic Table Multiple Choice Tests in Chemistry Education

Why Use Multiple Choice Tests for the Periodic Table?

Multiple choice tests offer several advantages in mastering the periodic table:

- **Efficient Assessment:** They allow quick evaluation of knowledge across a broad range of topics.
- **Focus on Key Concepts:** Well-designed questions target core understanding, such as element groups, atomic structure, and periodic trends.
- **Preparation for Standardized Tests:** Many exams incorporate multiple choice questions on the periodic table, making practice essential.
- **Instant Feedback:** Immediate results help identify areas needing improvement.

Key Topics Covered in Periodic Table Multiple Choice Tests

These tests typically encompass a variety of topics, including:

- Element symbols and names
- Atomic number and mass
- Electron configuration
- Periodic trends (e.g., electronegativity, atomic radius)
- Group and period characteristics
- Identification of metals, nonmetals, and metalloids
- Understanding of periodic table blocks (s, p, d, f)

- Isotopes and ions

How to Prepare for a Periodic Table Multiple Choice Test

Study Strategies for Success

Effective preparation involves a combination of review, practice, and strategic studying:

- Review the Periodic Table Regularly: Familiarize yourself with element positions, symbols, and properties.
- Use Visual Aids: Charts, flashcards, and color-coded periodic tables aid memory.
- Practice with Past Tests: Engage with previous or sample multiple choice questions to simulate test conditions.
- Understand Trends and Patterns: Recognize how properties change across periods and down groups.
- Memorize Key Data: Element symbols, atomic numbers, and common oxidation states are frequently tested.

Resources for Practice and Learning

- Online Quizzes: Websites like Khan Academy, ChemCollective, and Quizlet host periodic table quizzes.
- Educational Apps: Mobile apps offer interactive flashcards and timed quizzes.
- Textbooks and Workbooks: Many include practice questions specifically on the periodic table.
- Teacher-Provided Materials: Use worksheets and tests provided by your instructor.

Sample Multiple Choice Questions on the Periodic Table

To illustrate the typical format and difficulty level, here are some example questions:

Question 1

Which element has the atomic number 8?

- A) Nitrogen
- B) Oxygen
- C) Carbon

D) Fluorine

Answer: B) Oxygen

Question 2

Which of the following elements is a noble gas?

A) Chlorine

B) Argon

C) Sodium

D) Phosphorus

Answer: B) Argon

Question 3

Elements in the same group of the periodic table typically share:

A) Similar atomic masses

B) Similar chemical properties

C) The same number of neutrons

D) Different electron configurations

Answer: B) Similar chemical properties

Question 4

Which period contains the element with the largest atomic radius?

A) Period 2

B) Period 3

C) Period 4

D) Period 5

Answer: A) Period 2

Question 5

The element with the symbol "Fe" belongs to which group?

A) Alkali metals

B) Halogens

C) Transition metals

D) Noble gases

Answer: C) Transition metals

Strategies for Excelling in Periodic Table Multiple Choice Tests

1. Master the Layout of the Periodic Table

Understanding the structure of the periodic table is fundamental:

- Know the location of groups (columns) and periods (rows)
- Recognize the significance of different blocks (s, p, d, f)
- Memorize the placement of common elements

2. Focus on Periodic Trends

Questions often test understanding of trends such as:

- Atomic radius: increases down a group, decreases across a period
- Electronegativity: increases across a period, decreases down a group
- Ionization energy: increases across a period, decreases down a group

Practice interpreting these trends to answer questions efficiently.

3. Use Mnemonics and Memory Techniques

Memory aids can help recall element groups and properties:

- Mnemonics for groups (e.g., "Halk" for Hydrogen, Alkali metals, Halogens)
- Acronyms for the order of elements or periods

4. Practice Under Test Conditions

Simulate exam conditions to improve time management and reduce anxiety:

- Set a timer and complete practice questions
- Review answers thoroughly to understand mistakes

Common Challenges and How to Overcome Them

Difficulty Memorizing Element Symbols

- Use flashcards regularly
- Group elements by similar properties to reinforce memory

Understanding Periodic Trends

- Visualize trends using graph charts
- Relate trends to atomic structure for better comprehension

Time Management During Tests

- Read questions carefully
- Eliminate obviously wrong options to improve chances

Additional Tips for Teachers and Educators

- Incorporate interactive quizzes into lessons
- Use visual aids and periodic table posters
- Provide frequent formative assessments
- Encourage group discussions on periodic trends and element properties

Conclusion: Mastering the Periodic Table Through Multiple Choice Tests

A well-rounded approach to periodic table multiple choice tests combines thorough knowledge, strategic preparation, and ample practice. These assessments not only gauge understanding but also reinforce learning, making them an invaluable part of chemistry education. Whether you're a student aiming for top scores or a teacher designing effective assessments, utilizing diverse resources and proven strategies can significantly enhance your success. Remember, mastery of the periodic table opens the door to a deeper understanding of chemistry, allowing you to explore the fascinating world of elements with confidence.

Periodic Table Multiple Choice Test: An In-Depth Examination of Its Role in Chemistry Education

Understanding the structure and organization of the periodic table is fundamental to mastering chemistry. To assess students' grasp of this essential tool, educators frequently employ periodic table multiple choice tests. These assessments serve as a cornerstone in evaluating knowledge of elemental properties, periodic trends, and the overall architecture of the periodic table. This article explores the significance, construction, and educational impact of these tests, providing a comprehensive overview for educators, students, and educational researchers alike.

The Significance of Periodic Table Multiple Choice Tests in Chemistry Education

The periodic table is more than just a chart; it is a visual representation of the relationships among elements. Its understanding is crucial for predicting element behavior, understanding chemical reactions, and grasping fundamental concepts such as atomic structure and periodic trends.

Periodic table multiple choice tests offer several advantages:

- **Standardized Assessment:** They provide a consistent measure of student understanding across different educational settings.
- **Efficient Evaluation:** Multiple choice format allows for rapid testing of a broad range of concepts.
- **Diagnostic Tool:** They help identify misconceptions and gaps in knowledge.
- **Preparation for Further Learning:** These tests prepare students for standardized exams like the SAT, ACT, or advanced chemistry certifications.

Moreover, these assessments can be adapted to suit various educational levels, from high school to university, making them versatile tools in the educator's arsenal.

Constructing Effective Periodic Table Multiple Choice Questions

Designing high-quality multiple choice questions (MCQs) about the periodic table requires careful consideration to ensure they accurately evaluate understanding without introducing ambiguity or bias.

Core Principles for Question Development

- Clarity: Questions should be straightforward, avoiding overly complex language or convoluted phrasing.
- Focus on Key Concepts: Items should target essential ideas such as atomic number, electron configuration, periodic trends, and element groups.
- Plausible Distractors: Incorrect options (distractors) must be plausible to challenge students' reasoning rather than rely on obvious errors.
- Single Clear Correct Answer: To reduce confusion, each question should have one unambiguously correct choice.

Common Topics Covered

Questions can encompass a variety of themes, including:

- Element Identification: Atomic number, symbol, or location on the periodic table.
- Group and Period Trends: Atomic size, ionization energy, electronegativity.
- Element Properties: Metal, non-metal, metalloid classification.
- Periodic Table Features: Block designation (s, p, d, f), transition metals, lanthanides, actinides.
- Electron Configuration Patterns: Predicting electron arrangements based on group or period.

Sample Multiple Choice Questions

- Which element is located in Group 17 and Period 3 of the periodic table?

- a) Chlorine (Cl)
- b) Bromine (Br)
- c) Iodine (I)
- d) Fluorine (F)

- Among the following, which element has the highest atomic radius?

- a) Neon (Ne)
- b) Sodium (Na)
- c) Magnesium (Mg)
- d) Aluminum (Al)

- Which of these elements is classified as a noble gas?

- a) Oxygen (O)
- b) Argon (Ar)
- c) Nitrogen (N)
- d) Chlorine (Cl)

- The element with atomic number 11 belongs to which group?

- a) Alkali metals
- b) Alkaline earth metals
- c) Halogens
- d) Noble gases

Analyzing the Educational Impact of Periodic Table MCQs

Assessment tools like multiple choice tests do more than just grade students; they influence learning behaviors and conceptual understanding.

Benefits

- Reinforce Memory and Recall: Repetitive practice with MCQs enhances retention of key facts.

- Encourage Critical Thinking: Well-designed questions challenge students to analyze options and eliminate distractors.
- Identify Misconceptions: Immediate feedback from quizzes helps students recognize misunderstandings.
- Support Differentiated Instruction: Results can inform tailored teaching strategies.

Limitations and Challenges

While effective, these tests have limitations:

- Surface-Level Assessment: They often evaluate factual recall more than deep conceptual understanding.
- Guessing Effect: The multiple choice format allows for chance correct answers, potentially skewing results.
- Limited Scope for Explanation: They do not provide insight into students' reasoning processes, unlike open-ended questions or essays.

Enhancing Effectiveness

To maximize the educational value of periodic table MCQs:

- Incorporate questions that require application of concepts rather than rote memorization.
- Use distractors that reflect common misconceptions to diagnose specific misunderstandings.
- Combine MCQs with other assessment types for a comprehensive evaluation.

Innovations and Future Directions in Periodic Table Testing

With technological advancements, the landscape of assessments continues to evolve. Digital platforms enable dynamic, interactive multiple choice quizzes that adapt to student responses in real-time.

Adaptive Testing and Immediate Feedback

- Adaptive tests modify question difficulty based on previous answers, offering personalized assessment experiences.
- Instant feedback helps learners correct misconceptions promptly, reinforcing correct understanding.

Incorporating Visual and Interactive Elements

- Use of interactive periodic tables with clickable elements to assess spatial and contextual knowledge.
- Incorporation of multimedia such as videos and animations to explain periodic trends and properties.

Data Analytics and Learning Analytics

- Analyzing response patterns can inform curriculum adjustments and targeted interventions.
- Tracking progress over time helps measure conceptual growth and areas needing reinforcement.

Conclusion: The Role of Periodic Table Multiple Choice Tests in Chemistry Literacy

The periodic table remains a foundational element in chemistry education, and multiple choice assessments serve as an essential tool for evaluating and reinforcing students' understanding of this complex yet elegant chart. When thoughtfully constructed and strategically implemented, these tests promote retention, critical thinking, and conceptual clarity.

As educational paradigms shift towards digital and adaptive learning environments, the potential for more engaging, personalized, and insightful assessments grows. Future innovations will likely make periodic table multiple choice tests even more integral to cultivating chemistry literacy, preparing students for advanced scientific pursuits and fostering a deeper appreciation for the periodic marvel.

In sum, while they are just one component of a comprehensive chemistry education, well-designed multiple choice tests about the periodic table are indispensable for gauging and enhancing learners' mastery of elemental science.

References

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QuestionAnswer Which element is located in group 17 of the periodic table? Chlorine What is the atomic number of Carbon? 6 Which element is a noble gas? Neon Elements in the same period have the same: Number of electron shells Which of the following elements is a metal? A) Oxygen B) Sodium C) Nitrogen D) Chlorine Sodium What is the significance of the atomic mass on the periodic table? It represents the average mass of an element's isotopes weighted by their natural abundance

Related keywords: periodic table quiz, chemistry test, elements identification, atomic number questions, element symbols, periodic trends, chemical elements exam, chemistry multiple choice, periodic table practice, element properties quiz

Folding table saw outfeed table plans

Folding table saw outfeed table plans are an invaluable resource for woodworking enthusiasts and professionals alike. An outfeed table enhances the safety, efficiency, and precision of your table saw operations, especially when working with large sheets or long boards. The beauty of a folding design lies in its space-saving capability, allowing you to easily stow the table when not in use without sacrificing stability or functionality. Whether you're a seasoned woodworker or a DIY hobbyist, crafting a custom folding outfeed table can significantly improve your workshop setup. In this comprehensive guide, we will explore detailed plans, essential considerations, and step-by-step instructions to help you build a practical and durable folding table saw outfeed table.

Understanding the Importance of a Folding Outfeed Table

Why Build an Outfeed Table?

An outfeed table provides support for large workpieces as they exit the table saw, preventing sagging and kickback. It enhances safety and accuracy, especially during rip cuts involving long boards or sheet goods. A dedicated outfeed surface also reduces wear on your main saw table and minimizes the risk of accidental damage.

Advantages of a Folding Design

- Space Efficiency: Folds away when not in use, ideal for small workshops.
- Portability: Easier to move around or store compared to fixed tables.
- Convenience: Quick setup and collapse streamline workflow.

- Customization: Can be tailored to fit your specific saw model and workspace.

Planning Your Folding Outfeed Table

Assessing Your Workshop Space and Needs

Before diving into plans, evaluate your workshop layout:

- Measure available space when the table is folded and unfolded.
- Determine the maximum size of workpieces you typically handle.
- Consider the height and dimensions of your existing table saw.

Choosing Materials

Select durable, stable materials:

- Surface: Plywood (3/4" thickness) or MDF for smooth, flat support.
- Frame: Hardwood or sturdy softwood like pine or oak.
- Hinges and Hardware: Heavy-duty hinges, locking mechanisms, and support braces.
- Fasteners: Screws, bolts, and washers suitable for woodworking.

Design Considerations

- Ensure the table height matches your saw's surface for seamless support.
- Incorporate fold lines that allow easy collapse without compromising stability.
- Include adjustable or removable supports for different workpiece sizes.
- Plan for easy access to the saw controls and safety features.

Step-by-Step Folding Outfeed Table Plans

1. Gather Your Tools and Materials

- Power drill and screwdriver
- Circular saw or table saw
- Clamps
- Measuring tape and square
- Sandpaper or sander

- Hinges and support brackets
- Material for surface and frame

2. Cut Your Components

- Tabletop: Cut a piece of plywood or MDF to the desired size (e.g., 24" x 48").
- Supporting Frame: Cut side rails, end supports, and cross braces from hardwood or your chosen material.
- Folding Mechanism: Cut two or more support arms with hinge points, ensuring they can fold flat against the main frame.

3. Assemble the Main Frame

- Attach side rails to the underside of the tabletop using screws and brackets.
- Install cross braces for added stability.
- Ensure all connections are square and secure.

4. Install Folding Supports

- Attach support arms with heavy-duty hinges on one side of the table, allowing them to fold down.
- Secure the other end of the supports to the workshop surface or a dedicated stand.
- Test the folding mechanism to ensure smooth operation.

5. Add Locking and Support Mechanisms

- Incorporate support brackets or locking pins to hold the table in the unfolded position.
- Consider adjustable supports or telescoping legs for height customization.
- Add non-slip pads or feet for stability.

6. Sand and Finish

- Sand all surfaces smooth to prevent splinters.
- Apply a protective finish or sealant if desired.

7. Mount the Outfeed Table to Your Saw

- Position the table in line with your saw's outfeed side.
- Secure it firmly to prevent movement.
- Ensure the height aligns perfectly with your saw's surface for seamless support.

Additional Tips for Building a Durable Folding Outfeed Table

Maximizing Stability

- Use robust hinges rated for the weight.
- Reinforce support arms with additional bracing if necessary.
- Incorporate locking mechanisms to keep the table stable during use.

Enhancing Portability and Storage

- Use lightweight yet sturdy materials.
- Design fold lines that allow the table to fold flat easily.
- Consider adding handles or wheels for easier movement.

Customizing Your Outfeed Table

- Add drawers or storage compartments underneath.
- Incorporate cutouts or cable management features.
- Paint or stain to match your workshop decor.

Common Challenges and Solutions

Ensuring Proper Alignment

- Use precise measurements and square tools during assembly.
- Double-check hinge placement for smooth folding.

Maintaining Stability When Unfolded

- Use strong support braces and locking pins.
- Test the table with different workpieces to verify sturdiness.

Dealing with Space Constraints

- Opt for smaller designs or foldable supports.
- Use wall-mounted brackets to enhance support without occupying floor space.

Final Thoughts

Building a folding table saw outfeed table is an excellent way to improve your woodworking setup without sacrificing precious workshop space. With careful planning, quality materials, and precise construction, you can create a custom outfeed solution tailored to your needs. Not only does this project enhance safety and efficiency, but it also adds a professional touch to your workshop. Whether you're looking for a simple fold-up support or a feature-rich work surface, the right plans and execution can make all the difference. Take your time, measure twice, and enjoy crafting a reliable, space-saving addition to your woodworking arsenal.

Additional Resources

- Video Tutorials: Many woodworking channels offer step-by-step guides for outfeed tables.
- Workbench Plans: Combining your outfeed table with a custom workbench can maximize workshop functionality.
- Community Forums: Join woodworking forums for tips, modifications, and shared experiences.

Embark on your project today and enjoy the benefits of a well-designed folding outfeed table ? a true game-changer in your woodworking journey!

Folding Table Saw Outfeed Table Plans: The Ultimate Guide to Enhancing Your Workshop Efficiency

In the world of woodworking, precision, safety, and efficiency are paramount. Whether you're a seasoned professional or a passionate hobbyist, optimizing your workspace can significantly impact the quality of your projects. Among the essential accessories that elevate your woodworking experience is the folding table saw outfeed table. Not only does it provide a stable surface for large workpieces, but its folding design also ensures that your workshop remains compact and versatile. In this comprehensive guide, we'll explore everything you need to know about folding table saw outfeed table plans?from their benefits and design considerations to step-by-step building instructions and expert tips.

Understanding the Importance of an Outfeed Table

Before diving into plans and construction, it's crucial to comprehend why an outfeed table is a vital component of your workshop setup.

What Is an Outfeed Table?

An outfeed table is a surface positioned behind or beside a table saw, designed to support long or wide workpieces as they are cut. It ensures a smooth transition of materials from the saw blade to the supporting surface, reducing strain on the operator and helping maintain precise cuts.

Why Use a Folding Outfeed Table?

While fixed outfeed tables are common, a folding outfeed table offers several advantages:

- Space Efficiency: When not in use, it folds away, freeing up valuable workshop space.
- Portability: Easier to move or store, especially in smaller workshops.
- Convenience: Quick setup and breakdown make it ideal for projects requiring different configurations.
- Cost-Effective: Avoids the need for large permanent fixtures, saving money and space.

Design Considerations for Folding Outfeed Tables

Creating an effective folding outfeed table requires careful planning. Here are key factors to consider:

Size and Dimensions

- Width and Depth: The table should extend beyond the saw's table to support long workpieces. Common widths range from 24" to 36", with depths of 12" to 24".
- Height: Typically matches the height of your saw's table for seamless support, usually around 34" to 36".

Materials

- Surface: Plywood or MDF with a smooth finish for precise cuts.
- Frame and Supports: Hardwood or sturdy metal for durability, especially around hinges and folding mechanisms.
- Wheels or Casters: Optional, for mobility.

Folding Mechanism

- Hinges: Heavy-duty hinges that allow smooth folding.
- Locking Devices: To secure the table in the open position during use.
- Ease of Folding: Mechanism should be simple yet stable.

Stability and Support

- Reinforced framing to prevent sagging.
- Adjustable leveling feet if the workshop floor is uneven.

Step-by-Step Plans for Building a Folding Outfeed Table

Constructing your own folding outfeed table can be a rewarding project. Below is an outline of the essential steps, along with tips for customization.

Materials Needed

- 3/4" plywood sheet (for surface)
- Hardwood or metal for frame
- Heavy-duty hinges
- Locking pins or clamps
- Bolts, nuts, and washers
- Casters (optional)
- Wood screws
- Wood glue
- Sandpaper or finish

Tools Required

- Circular saw or table saw
- Drill with various bits
- Screwdriver
- Clamps
- Measuring tape
- Square
- Level

Building Instructions

- Measure and Plan

- Measure your saw's dimensions and workspace.
- Sketch a detailed plan, noting measurements for each component.

- Cut the Surface Board

- Cut the plywood sheet to your desired size, ensuring it extends adequately to support long pieces.
- Sand edges for smoothness.

- Construct the Frame

- Build a rectangular frame from hardwood or metal that matches the surface dimensions.
- Reinforce corners with additional blocks or braces for stability.

- Attach the Folding Legs

- Use heavy-duty hinges to connect the frame to folding legs.
- Ensure the hinges are positioned for balanced support.
- Attach locking mechanisms (such as clamps or pins) to hold the table in the open position.

- Install the Surface

- Secure the plywood surface to the frame with screws and glue.
- Check for flatness and secure fit.

- Add Supports and Supports

- Incorporate foldable brackets or fold-out supports underneath for additional stability if necessary.

- Install leveling feet if needed.

- Attach Casters (Optional)

- For mobility, attach casters to the legs, ensuring they lock in place during use.

- Test the Folding Mechanism

- Practice folding and unfolding the table.

- Make adjustments to hinges or supports for smooth operation.

Expert Tips for a Successful Build

- Prioritize Safety: Use sturdy hinges and locking mechanisms to prevent accidental folding during operation.

- Choose Quality Materials: Investing in durable materials ensures longevity.

- Customize Your Size: Tailor dimensions to fit your workflow, especially if you frequently work with specific sizes of wood.

- Add a Router or Edge Guide: Incorporate additional features like a router slot or edge guides for versatility.

- Finish the Surface: Seal or paint the surface to prevent splinters and improve durability.

Additional Features and Accessories

Enhancing your folding outfeed table can further improve functionality:

- Dust Collection Ports: Integrate ports to connect with your dust collection system.

- Clamping Systems: Add clamps or hold-downs to secure workpieces.

- Extension Wings: Consider adding removable or foldable extension wings for wider support.

- Sacrificial Tops: Attach removable tops for routing or finishing work.

Maintenance and Long-Term Care

- Regularly inspect hinges and locking mechanisms for wear.
- Tighten bolts and screws periodically.
- Clean the surface to prevent buildup of dust and debris.
- Refinish or reseal the surface periodically to maintain smoothness.

Conclusion

A folding table saw outfeed table is an invaluable addition to any woodworking shop, combining practicality, safety, and space-saving design. By following detailed plans and expert tips, you can craft a customized, sturdy, and functional outfeed table that enhances your cutting accuracy and workflow efficiency. Whether you're supporting large panels or simply looking to optimize your workspace, a well-designed folding outfeed table offers flexibility and professionalism that will serve you for years to come.

Investing time in planning and building your own outfeed table not only saves money but also allows you to tailor the features to your specific needs. With patience and attention to detail, you'll gain a versatile accessory that makes woodworking safer, easier, and more enjoyable.

Question What are the benefits of building a folding outfeed table for my table saw? A folding outfeed table provides additional support for large cuts, improves safety, saves space when not in use, and enhances cutting accuracy by providing a stable surface. **Answer** What materials are recommended for constructing a folding outfeed table? Plywood or MDF are popular choices due to their stability and affordability, complemented with sturdy hinges, locking mechanisms, and a durable surface like laminate or hardwood for the tabletop. Are there specific plans available for building a DIY folding outfeed table? Yes, numerous free and paid plans are available online, including detailed step-by-step guides and diagrams to help you construct a custom folding outfeed table tailored to your workspace. How do I ensure the folding outfeed table is stable and secure during use? Use robust hinges, lock-in-place supports, and secure mounting brackets. Adding locking mechanisms or support braces that engage when the table is unfolded can significantly improve stability. Can a folding outfeed table be customized for different table saw sizes and needs? Absolutely. Plans can be modified to match your specific saw dimensions, work area, and preferences, allowing for custom features like adjustable height or additional storage. What tools and skills are needed to build a folding outfeed table from plans? Basic woodworking tools such as a saw, drill, screwdriver, and measuring tools are required. Skills in cutting, measuring, assembling, and understanding hinges and supports are also necessary. Where can I find inspiration or community support for my folding outfeed table project? Online woodworking forums, YouTube tutorials, Reddit communities like r/woodworking, and Pinterest boards are excellent sources for ideas, plans, and advice from fellow DIY enthusiasts.

Related keywords: folding outfeed table, table saw accessories, woodworking outfeed table, DIY outfeed table plans, portable outfeed table, woodworking shop setup, table saw extension, saw

station design, foldable workshop table, woodworking jigs

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