Naming Acids Worksheet Questions and Answers PDF

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Part 1: Foundational Knowledge

What is the prefix used in the naming of binary acids?

Hint: Think about the common prefixes used in acid nomenclature.

- ◯ Per-
- ◯ **Hydro- ✓**
- ◯ Hypo-
- ◯ Meta-

> The prefix used in the naming of binary acids is 'Hydro-'.

What is the prefix used in the naming of binary acids?

Hint: Think about the common prefixes used in acid nomenclature.

- ◯ Per-
- ◯ **Hydro- ✓**
- ◯ Hypo-
- ◯ Meta-

> The prefix used in the naming of binary acids is 'hydro-'.

Which of the following are characteristics of acids? (Select all that apply)

Hint: Consider the properties of acids in aqueous solutions.

- ☐ **Release hydrogen ions in water ✓**
- ☐ Taste bitter
- ☐ **Turn blue litmis paper red ✓**
- ☐ Feel slippery

> Acids release hydrogen ions in water, turn blue litimus paper red.

Which of the following are characteristics of acids? (Select all that apply)

Hint: Consider the properties that define acids in chemistry.

- [ ] **Release hydrogen ions in water ✓**
- [ ] Taste bitter
- [ ] **Turn blue litimus paper red ✓**
- [ ] Feel slippery

> Acids typically release hydrogen ions in water and turn blue litimus paper red.

Which of the following are characteristics of acids? (Select all that apply)

Hint: Consider the properties that define acids.

- [ ] **Release hydrogen ions in water ✓**
- [ ] Taste bitter
- [ ] **Turn blue litimus paper red ✓**
- [ ] Feel slippery

> Acids typically release hydrogen ions in water and turn blue litimus paper red.

Explain the difference between binary acids and oxyacids in terms of their composition.

Hint: Consider the elements that make up each type of acid.

> **Binary acids consist of hydrogen and one other nonmetal, while oxyacids contain hydrogen, oxygen, and another element.**

Explain the difference between binary acids and oxyacids in terms of their composition.

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Hint: Consider the elements that make up each type of acid.

> **Binary acids consist of hydrogen and one other nonmetal, while oxyacids contain hydrogen, oxygen, and another element.**

List the suffixes used for naming acids derived from polyatomic ions ending in "-ate" and "-ite."

Hint: Think about how the endings of the polyatomic ions change when naming acids.

1. -ate

> -ic

2. -ite

> -ous

> The suffix for '-ate' is '-ic' and for '-ite' is '-ous'.

List the suffixes used for naming acids derived from polyatomic ions ending in "-ate" and "-ite."

Hint: Think about the naming conventions for polyatomic ions.

1. -ate:

> -ic

2. -ite:

> -ous

> The suffix for '-ate' ions is '-ic' and for '-ite' ions is '-ous'.

Part 2: Comprehension

Which of the following is the correct name for H_2SO_4?

Hint: Consider the common names for acids derived from sulfur.

- ◯ Sulfurous acid
- ◯ **Sulfuric acid ✓**
- ◯ Hydrosulfuric acid
- ◯ Sulfate acid

> The correct name for H_2SO_4 is 'Sulfuric acid'.

Which of the following is the correct name for H_2SO_4?

Hint: Consider the common names for sulfur-based acids.

- ◯ Sulfurous acid
- ◯ **Sulfuric acid ✓**

- ◯ Hydrosulfuric acid
- ◯ Sulfate acid

> The correct name for H_2SO_4 is sulfuric acid.

Which of the following is the correct name for H_2SO_4?

Hint: Consider the common names for sulfur-containing acids.

- ◯ Sulfurous acid
- ◯ **Sulfuric acid ✓**
- ◯ Hydrosulfuric acid
- ◯ Sulfate acid

> The correct name for H_2SO_4 is sulfuric acid.

Identify the correct names for the following acids: HNO_3 and HNO_2.

Hint: Think about the naming conventions for nitric and nitrous acids.

- ☐ **Nitric acid and Nitrous acid ✓**
- ☐ Nitrous acid and Nitric acid
- ☐ Hydro nitric acid and Hydro nitrous acid
- ☐ Nitrate acid and Nitrite acid

> HNO_3 is nitric acid and HNO_2 is nitrous acid.

Identify the correct names for the following acids: HNO_3 and HNO_2.

Hint: Think about the naming conventions for acids derived from nitrogen.

- ☐ **Nitric acid and Nitrous acid ✓**
- ☐ Nitrous acid and Nitric acid
- ☐ Hydro nitric acid and Hydro nitrous acid
- ☐ Nitrate acid and Nitrite acid

> HNO_3 is Nitric acid and HNO_2 is Nitrous acid.

Identify the correct names for the following acids: HNO_3 and HNO_2.

Hint: Think about the naming conventions for nitric and nitrous acids.

- ☐ **Nitric acid and Nitrous acid ✓**

- [ ] Nitrous acid and Nitric acid
- [ ] Hydro nitric acid and Hydro nitrous acid
- [ ] Nitrate acid and Nitrite acid

> HNO_3 is nitric acid and HNO_2 is nitrous acid.

Describe how the naming of oxyacids is influenced by the polyatomic ions they contain.

Hint: Consider the relationship between the polyatomic ion and the acid name.

> **The naming of oxyacids is based on the name of the polyatomic ion; '-ate' ions become '-ic' acids and '-ite' ions become '-ous' acids.**

Describe how the naming of oxyacids is influenced by the polyatomic ions they contain.

Hint: Consider the relationship between the ion names and the acid names.

> **The naming of oxyacids is based on the name of the polyatomic ion; '-ate' becomes '-ic' and '-ite' becomes '-ous'.**

Describe how the naming of oxyacids is influenced by the polyatomic ions they contain.

Hint: Consider the relationship between the polyatomic ion and the acid name.

> **The naming of oxyacids is based on the polyatomic ion's name, with '-ate' ions becoming '-ic' acids and '-ite' ions becoming '-ous' acids.**

Part 3: Application and Analysis

Given the formula HClO, what is the correct name of this acid?

Hint: Think about the naming conventions for acids containing chlorine.

- ◯ Chloric acid
- ◯ **Hypochlorous acid ✓**
- ◯ Perchloric acid
- ◯ Chlorous acid

> The correct name for HClO is 'Hypochlorous acid'.

Given the formula HClO, what is the correct name of this acid?

Hint: Think about the naming conventions for acids with chlorine.

- ◯ Chloric acid
- ◯ **Hypochlorous acid ✓**
- ◯ Perchloric acid
- ◯ Chlorous acid

> The correct name for HClO is hypochlorous acid.

Given the formula HClO, what is the correct name of this acid?

Hint: Think about the naming conventions for acids containing chlorine.

- ◯ Chloric acid
- ◯ **Hypochlorous acid ✓**

- ◯ Perchloric acid
- ◯ Chlorous acid

> The correct name for HClO is hypochlorous acid.

Which of the following formulas represent binary acids? (Select all that apply)

Hint: Consider the formulas that consist of hydrogen and one other nonmetal.

- ☐ **HBr ✓**
- ☐ H_2CO_3
- ☐ **HI ✓**
- ☐ HNO_3

> HBr and HI are examples of binary acids.

Which of the following formulas represent binary acids? (Select all that apply)

Hint: Consider the formulas that consist of hydrogen and one other element.

- ☐ **HBr ✓**
- ☐ H_2CO_3
- ☐ **HI ✓**
- ☐ HNO_3

> Binary acids consist of hydrogen and one other nonmetal element.

Which of the following formulas represent binary acids? (Select all that apply)

Hint: Consider the formulas that consist of hydrogen and one other nonmetal.

- ☐ **HBr ✓**
- ☐ H_2CO_3
- ☐ **HI ✓**
- ☐ HNO_3

> Binary acids consist of hydrogen and one other nonmetal, such as HBr and HI.

Write the chemical formula for phosphoric acid and explain the steps involved in deriving it from its name.

Hint: Consider the components of the name and how they relate to the formula.

> **The chemical formula for phosphoric acid is H_3PO_4, derived from the phosphate ion.**

Write the chemical formula for phosphoric acid and explain the steps involved in deriving it from its name.

Hint: Consider the components of phosphoric acid.

> **The chemical formula for phosphoric acid is H_3PO_4, derived from the phosphate ion.**

Write the chemical formula for phosphoric acid and explain the steps involved in deriving it from its name.

Hint: Consider the components of phosphoric acid.

> **The chemical formula for phosphoric acid is H_3PO_4, derived from the name by identifying the elements involved.**

Part 4: Evaluation and Creation

Create a name for an acid with the formula H_2TeO_4. Which of the following names would be correct?

Hint: Think about the naming conventions for acids derived from tellurium.

- [x] **Telluric acid ✓**
- [ ] Tellurous acid
- [ ] Hydrotelluric acid
- [ ] Perchloric acid

> The correct name for H_2TeO_4 is 'Telluric acid'.

Create a name for an acid with the formula H_2TeO_4. Which of the following names would be correct?

Hint: Think about the naming conventions for tellurium-containing acids.

- [x] **Telluric acid ✓**
- [ ] Tellurous acid
- [ ] Hydrotelluric acid
- [ ] Perchloric acid

> The correct name for H_2TeO_4 is telluric acid.

Create a name for an acid with the formula H_2TeO_4. Which of the following names would be correct?

Hint: Consider the naming conventions for tellurium-based acids.

- [x] **Telluric acid ✓**
- [ ] Tellurous acid
- [ ] Hydrotelluric acid
- [ ] Perchloric acid

> The correct name for H_2TeO_4 is telluric acid.

Evaluate the naming system for acids and propose any improvements or changes that could make it more intuitive for learners.

Hint: Consider the challenges learners face with the current naming conventions.

The naming system could be improved by simplifying the rules and providing more examples.

Evaluate the naming system for acids and propose any improvements or changes that could make it more intuitive for learners.

Hint: Consider the challenges students face with acid nomenclature.

The naming system could be improved by providing clearer guidelines and examples for students.

Evaluate the naming system for acids and propose any improvements or changes that could make it more intuitive for learners.

Hint: Consider the challenges learners face with acid nomenclature.

The naming system could be improved by providing clearer guidelines and examples for learners.

Given the following polyatomic ions, create the names for their corresponding acids:

Hint: Think about the naming conventions for acids derived from these ions.

1. NO_3^-

Nitric acid

2. ClO_2^-

Chlorous acid

3. SO_4^{2-}

Sulfuric acid

The names for the acids are based on the polyatomic ions' endings.

Given the following polyatomic ions, create the names for their corresponding acids:

Hint: Think about the naming conventions for acids derived from polyatomic ions.

1. NO_3^-:

Nitric acid

2. ClO_2^-:

Chlorous acid

3. SO_4^{2-}:

Sulfuric acid

The names for the acids are based on the names of the polyatomic ions they derive from.

Given the following polyatomic ions, create the names for their corresponding acids:

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1. NO_3^-:

Nitric acid

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Chlorous acid

3. SO_4^{2-}:

Sulfuric acid

The names for the acids are based on the suffixes of the polyatomic ions.